Human Resources Development Canada
Développement des ressources humaines Canada

# Occupational Analyses Series

# Glazier

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# Occupational Analyses Series
# Glazier

1994

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and Standards

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# OTHER RELATED OCCUPATIONAL TITLES

This analysis covers tasks performed by a glazier whose occupational title has been identified by some provinces and territories of Canada under the following names:

Glassworker
Glazier and Metal Mechanic

# LIST OF PUBLISHED OCCUPATIONAL ANALYSES [*]

Aircraft Gas Turbine Engine Repair and Overhaul Technician (1992)

Aircraft Structural Repair Technician (1992)

Aquaculture Technician (1977)

Arts Administrator (1989)

**Automotive Service Technician (1990)**

Automotive Technician - Automatic Transmission (1990)

Automotive Technician - Electrical/Electronics (1992)

Automotive Technician - Engine Repair and Fuel Systems (1989)

Automotive Technician - Front-End (1989)

Automotive Technician - Manual Transmission, Driveline and Brakes (1990)

Aviation Machinist (1994)

**Baker (1991)**

Blaster (Surface) (1987)

**Boilermaker (1994)**

**Bricklayer (1993)**

**Cabinetmaker (1992)**

**Carpenter (1993)**

Cement Finisher (1983)

**Construction Electrician (1994)**

**Cook (1991)**

Electrical Mechanic (1981)

Electronics Technician Vol. I (1986)
(Video Equipment)

Electronics Technician Vol. II (1986)
(Audio Equipment)

Electronics Technician Vol. III (1986)
(Computer Equipment)

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[*] **Red Seal analyses are indicated in bold.**

Electronics Technician Vol. IV (1986)
(Office Equipment)

Electronics Technician Vol. VI (1986)
(Communication Equipment)

Electronics Technician Vol. VII (1986)
(Signaling Equipment)

Electronics Technician Vol. VIII (1986)
(Navigation Equipment)

Electronics Technician Vol. IX (1986)
(Video Game Equipment)

Electronics Technician Vol. X (1987)
(CADD Equipment)

Electronics Technician Vol. XI (1987)
(CAM Equipment)

Electronics Technician Vol. XII (1987)
(Robotics Equipment)

Electronics Technician Vol. XIII (1987)
(Biomedical and Laboratory Equipment)

Electronics Technician Vol. XIV (1987)
(Industrial Process-Control Equipment)

**Farm Equipment Mechanic (1994)**

**Floorcovering Installer (1991)**

**Glazier (1994)**

**Hairstylist (1992)**

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**Heavy Equipment Mechanic (1987)**

Heavy Equipment Operator (1983)

**Industrial Electrician (1987)**

**Industrial Instrument Mechanic (1988)**

**Industrial Mechanic (Millwright) (1988)**

**Insulator (Heat and Frost) (1993)**

**Ironworker (Generalist) (1993)**

**Lather (Interior Systems Mechanic) (1994)**

**Lineman (1988)**

Logistics (1992)

**Machinist (1992)**

Major Electrical Appliance Repairer (1984)

**Mobile Crane Operator (1992)**

**Motor Vehicle Body Repairer (1989)**

**Motor Vehicle Repairer (Truck and Transport) (1983)**

New Home Builder and Residential Renovation Contractor (1992)

**Oil and Solid Fuel Heating Mechanic (1986)**

**Painter and Decorator (1993)**

**Plumber (1989)**

Power Engineer (1986)

**Refrigeration and Air-Conditioning Mechanic (1989)**

**Roofer (1991)**

**Sheet Metal Worker (1990)**

**Sprinkler System Installer (1986)**

**Steel Fabricator (Fitter) (1994)**

**Steamfitter-Pipefitter (1989)**

**Truck-Trailer Repairer (1994)**

**Tool and Die Maker (1992)**

**Welder (1989)**

**REQUESTS FOR THESE PUBLICATIONS SHOULD BE FORWARDED TO:**

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# FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources Development Canada sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA), to develop a series of occupational analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;
- to identify those tasks that are performed by skilled workers in every province and territory;
- to develop instruments for use in the preparation of interprovincial standards "Red Seal" examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility, in Canada, of trainees and skilled workers; and
- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

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# GUIDE TO ANALYSIS

## DEVELOPMENT OF ANALYSIS

A draft analysis is developed by a knowledgeable consultant who, with the assistance of a committee of industry experts in the field, identifies all the tasks performed in the occupation.

The draft is then assigned to occupational analysts at Human Resources Development Canada for review, translation and edit to ensure conformity with the nationally approved format.

The analysis is forwarded to provincial/territorial authorities for validation by specialists in the field. Their recommendations are assessed and incorporated into the final draft which also includes the identification of the common core tasks performed in the occupation.

The occupational analysis is published in both official languages.

## STRUCTURE OF ANALYSIS

To facilitate the understanding of the nature of the occupation, the work performed is divided into the following divisions:

A. **BLOCK** - is the largest division within the analysis and reflects a distinct operation relevant to the occupation.

B. **TASK** - is the distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".

C. **SUB-TASK** - is the smallest division into which it is practical to sub-divide any work activity and, combined with others, fully describes all duties constituting a "TASK".

### Enabling Objectives

The element of skill and knowledge that an individual must acquire to perform the task adequately.

### Trend

Any shifts or changes in technology that affect the sub-tasks are identified under this heading.

# VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-Committee developed a method for the validation of the national Red Seal occupational analyses.

A draft of the analysis is sent to all provinces/territories for validation. Each jurisdiction rates the sub-tasks and applies percentage ratings to blocks and tasks. This method for the validation of the national occupational analyses identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Red Seal examinations.

## DEFINITIONS

| | |
|---|---|
| **YES:** | the sub-task is performed. |
| **NO:** | the sub-task is not performed. |
| **BLOCK %:** | the average time a worker spends performing each block in a given year in relation to other blocks of the analysis, taking into consideration the complexity (importance plus difficulty) of the block. (See Appendices "C" and "D" for numerical and graphical representations of this specific occupation.) |
| **TASK %:** | the average time a worker spends performing each task in relation to other tasks within the block, taking into consideration the complexity (importance plus difficulty) of the task. (See Appendix "C" for numerical representation of this specific occupation.) |
| **NV:** | Not Validated by the province/territory. |
| **ND:** | Not Designated in that province/territory. |

## COMMON CORE

The criteria for determining common core are dependant on the performance of sub-tasks. If 70% of the responding jurisdictions (excluding NVs and NDs) perform the sub-task, it shall be considered common core.

In the analysis, Block A is reserved for safety practices. Since safety practices are a mandatory feature of all occupations, it is considered common core and ratings are not required.

Interprovincial Red Seal examinations are based on the common core identified through this validation process.

# SCOPE OF ANALYSIS

The scope of this activity was to analyze the occupation of the glazier. This occupational analysis was developed through a group process employing a nationally representative panel of experts composing of eight glaziers and one supervisor. The criteria used for selecting the panel members included: geographical representation, years of experience in the occupation, size of firm, specific nature of experience in glazing, and related supervisory experience. Members of the panel were identified with the assistance of the provincial Directors of Apprenticeship Training and were selected from the following provinces: Alberta, British Columbia, Manitoba, Ontario, Quebec and Saskatchewan.

The product of this analysis was used to draw a competency profile of the glazier. This profile consists of blocks, tasks and sub-tasks outlining the knowledge, skills and abilities required by the glaziers in the accomplishment of their duties. Current trends having some significant effects on each of the tasks identified were formulated. Also, enabling objectives along with a list of tools and equipment supporting the successful accomplishment of each sub-task were identified.

This analysis is national in scope and as such covers all the tasks performed by glaziers. Glaziers prepare, install and replace glass in residential, commercial and industrial buildings, on exterior walls of buildings and other structures and in vehicles, furniture and other products. The duties performed will vary, depending upon the firm by which the glazier is employed. Some firms cater to certain areas of the glass working industry, such as auto glass, commercial aluminum and glass installation, as well as residential window installations and repairs.

Although the glazier may branch off into a specialty area, versatility in all other areas remains important. It should be noted, however, that the competency requirements for the occupation may vary according to such factors as geographical location and size of firm.

The analysis is not intended to be a course study. It simply identifies all of the tasks performed by the glaziers. It can be used, however, as a basis for the development of training profile charts for vocational schools, apprenticeship training programs and upgrading programs for the glaziers.

The body of the analysis is limited by its terms of reference to a description of the "work performed" in the glazing occupation. It omits identification of other factors, such as aptitudes and capacities, interests and temperaments, and the conditions under which the worker performs his/her duties. These data have been included in the form of appendices, not as a constituent part of the analysis but rather as a by-product, with the thought that such information may be useful to those agencies responsible for the development of training programs.

# OBSERVATIONS AND TRENDS ARISING FROM ANALYSIS

Some significant observations and trends emerged from the national occupational analysis of the glaziers' occupation. These observations and trends are briefly outlined in this section.

Over half of the glass produced in Canada is utilized in construction, a third in transportation and the balance in applications, such as furniture, shelving, mirrors, signs, and solar panels. The home renovation market sees an increased use of unprocessed flat glass in various value-added products, such as insulated (sealed) glass window units, skylites, solariums and coated glass. Glaziers may work in different environments, such as construction, wholesale-retail, transportation, and manufacturing. As a result, their skill requirements may vary according to the environment where they are employed. The introduction of technological innovations in the manufacturing environment is augmenting the skill requirements of shop glaziers in contrast with site glaziers.

Glaziers employed by small contractors may be required to perform both shop and site duties. Some duties of the glazing occupation, such as installation of automotive glass and installation of glass in recreational facilities, are becoming specialty areas. These changes have resulted in increased wage differentials within the occupation.

With the increasing use of prefabricated windows, glass doors and curtain walls, site glaziers are being gradually deskilled as much of the fabricating task are being performed by shop glaziers, leaving only the installation work to site glaziers. Additionally, a considerable amount of the installation work is increasingly being performed by carpenters.

As customers and employers become more sophisticated in demand and develop higher expectations for services, sound employability skills are becoming increasingly more important to glaziers. These essential employability skills include: learning how to learn, computation, writing, reading, communication, listening, problem solving, creative thinking and interpersonal skills.

There is a general concern regarding the decline in the number of apprentices entering the occupation. This problem is not particular to glaziers, but has rather reached a crisis state in many other apprenticeable trades, due to the burst of the baby boom, and to the overemphasis currently being placed on the academics and white collar occupations. New initiatives are required to revitalize apprenticeship and attract young apprentices to the occupation, especially those from the non-traditional groups, such as women, aboriginals and members of visible minorities.

# ANALYSIS

## BLOCK A PARTICIPATING IN WORKPLACE HEALTH AND SAFETY

### Task 1 Demonstrates safety awareness.

Trend: Increased awareness for safety; more stringent legislations for the enforcement of safe practices at the workplace.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 1.01 | Practises safe work habits. | knowledge of human factor limitations | |
| | | knowledge of job requirements with regards to the limitations of the human body | |
| | | knowledge of occupational hazards | |
| 1.02 | Maintains good postures. | knowledge of good and safe postures for performing various tasks | |
| 1.03 | Performs wellness exercises. | knowledge of the importance and benefits of wellness exercises | |
| | | ability to perform various warm-up exercises | |
| 1.04 | Updates safety knowledge. | ability to participate in safety committees | |
| | | ability to attend workshops and seminars | |
| | | ability to read and understand related literature | |
| 1.05 | Observes drug and alcohol safety regulations. | knowledge of any existing local, provincial and national guidelines on drugs and alcohol abuse in the workplace and the rights and obligations of workers | |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| | knowledge of the effects of drugs and alcohol on human performance | |
| | ability to report deviant behaviours | |
| 1.06 Promotes workplace health and safety. | ability to promote workplace health and safety | |
| | ability to help apprentices and other tradespersons to develop safety consciousness | |
| | ability to identify and report unsafe practices | |
| | ability to take initiatives for creating and maintaining a safe workplace environment | |
| | ability to distinguish between environmentally and non-environmentally safe products | |
| 1.07 Practises sound, personal hygiene. | knowledge of occupational health hazards and methods of prevention | |
| | knowledge of personal hygiene and proper grooming practices | |
| | knowledge of workplace health and safety related to food and beverages | |
| | knowledge of hygiene related to the use of personal protective equipment | |

### Task 2 Maintains a safe workplace environment.

Trend: Increased awareness for safety; more stringent legislations for the enforcement of safe practices at the workplace.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 2.01 | Assesses workplace safety. | knowledge of applicable safety and health standards: national, provincial and local regulations, Workers' Compensation Board (WCB) regulations |  |
|  |  | knowledge of occupational health hazards and methods of prevention |  |
|  |  | knowledge of the employees' right to refuse or stop work |  |
|  |  | ability to identify health and safety hazards in order to eliminate human injuries, damage to tools, machines and equipment |  |
|  |  | knowledge of waste control |  |
|  |  | knowledge of regulations governing the disposal of glass materials and toxic waste |  |
|  |  | ability to identify and correct hazards on sites |  |
|  |  | knowledge of and ability to maintain safety zones and adequate working space around machines, equipment and work areas on site |  |
|  |  | ability to perform various tasks according to the Canada Labour Code, the Occupational Health and Safety Act and the Workers' Compensation Act |  |
|  |  | ability to identify hazardous conditions |  |
|  |  | ability to make suggestions for improving workplace health and safety |  |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 2.02 | Maintains an orderly and safe job site. | knowledge of safe site practices |  |
|  |  | knowledge of correct methods of storing tools and materials |  |
|  |  | ability to perform safety inspection on job site, identify and remove hazardous conditions |  |
| 2.03 | Maintains an orderly shop environment. | knowledge of general shop safety |  |
|  |  | knowledge of and ability to operate tools, machines and equipment safely |  |
|  |  | ability to perform shop safety inspection |  |
|  |  | ability to identify and eliminate hazardous conditions |  |
| 2.04 | Identifies danger zones with warning signs. | ability to recognize working conditions where warning signs are required |  |
|  |  | ability to identify danger zones correctly |  |
|  |  | knowledge of safe practices for placing warning signs on newly installed glass |  |
| 2.05 | Identifies hazardous working conditions. | knowledge of guard requirements against slips and falls as well as hazards of working in heights |  |
|  |  | knowledge of hazards associated with falling objects |  |
|  |  | knowledge of proper lighting of work areas |  |
|  |  | knowledge of safety regulations |  |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
|  | ability to determine one's legal right to work under hazardous conditions |  |
|  | knowledge of and ability to identify environmental hazard on job site |  |
| 2.06 Handles hazardous materials. | knowledge of the cleaning agents, alkalines, acids, solvents, other chemicals and their related hazards | gloves, boots, goggles, facial masks, apron |
|  | knowledge and observance of Workplace Hazardous Materials Information System (WHMIS) |  |
|  | ability to read labels and Material Safety Data Sheets (MSDS) |  |
|  | knowledge of the importance of proper ventilation |  |
|  | ability to make suggestions for improving workplace health and safety |  |
|  | knowledge of proper ways to dispose of hazardous materials |  |
|  | knowledge of and ability to inspect, select, adjust and wear proper personal protective devices |  |
| 2.07 Handles glass materials safely. | knowledge of and ability to lift and transport glass materials safely |  |
|  | knowledge of and ability to work with glass materials safely |  |
|  | ability to handle broken glass safely |  |
|  | ability to select appropriate protective equipment for handling glass materials |  |
|  | ability to barricade areas containing broken glass |  |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of safe practices for the disposal of broken glass | |
| | | knowledge of arm protectors | |
| 2.08 | Stores materials safely. | knowledge of safe practices for storing glass, chemicals, aluminum extrusions and sealants | |
| 2.09 | Uses proper lifting techniques. | ability to make proper lifts | |
| | | knowledge of mechanical aids, chain blocks and levers | |
| | | knowledge of safe practices for lifting | |
| 2.10 | Practises first aid. | knowledge of first aid | |
| | | ability to perform mouth to mouth resuscitation | |
| | | ability to stop bleeding, provide first aid for shock, wounds, burns, scalds, broken bones, and eye injury | |
| | | knowledge of and ability to function as a safety officer | |
| | | knowledge of safe practices when providing first aid related to bleeding | |
| | | knowledge of certification requirements for first aid | |
| 2.11 | Reports accident and injuries. | knowledge of government and company policies for reporting accidents | |
| 2.12 | Practises effective fire prevention and fire fighting. | ability to locate fire extinguishers and fire exits | fire extinguishers, fire blankets |
| | | ability to maintain obstacle free emergency exits | |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| | knowledge of various classes of fires and extinguishers, proper procedures to follow in case of clothing ignition | |
| | knowledge of sprinkler systems, proper storage and handling of flammable liquids, materials and gases | |
| | knowledge of the importance of maintaining clear exits at all times | |
| | ability to identify and eliminate potential fire hazards | |
| | knowledge of proper evacuation procedures | |
| | ability to ensure that all safety devices are in perfect working condition | |
| | knowledge of and ability to store chemical products and dispose of chemical waste properly | |
| | ability to use various fire fighting equipment to extinguish various classes of fires | |
| | knowledge of fire safety and health hazards when working on winterized job sites | |
| 2.13 Supervises other tradespersons. | ability to model safe practices | |
| | knowledge of and ability to help apprentices develop safe practices | |

**Task 3** **Wears personal protective clothing and equipment.**

Trend: Increased awareness for safety; more stringent legislations for the enforcement of safe practices at the workplace.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 3.01 | Wears protective clothing. | knowledge of suitable clothing for job and changing weather conditions | gloves, apron, safety boots, hard hat |
| | | knowledge of importance of hard hats, gloves, safety boots | |
| 3.02 | Wears eye protection. | ability to determine when to use goggles, safety glasses, face shields | |
| | | knowledge of Canadian Standards Association's (CSA) standards for eye protection equipment | |
| 3.03 | Wears hearing protection. | knowledge of the psychological and physiological effects of noise | ear-plugs, ear- muffs |
| | | knowledge of various hearing protective equipment | |
| | | knowledge of personal hygiene for hearing protective devices | |
| | | knowledge of permissable exposure time to various noise levels | |
| | | knowledge of hearing tests | |
| | | ability to select and wear protecting devices | |
| 3.04 | Wears respirators. | knowledge of occupational hazards related to vapours, fumes and dust | |
| | | knowledge of chemical vapours | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of various ways to protect workers from airborne hazardous materials | |
| | | knowledge of ventilation systems, various respirators, dust masks, face masks, and other designated devices | |
| | | ability to select, adjust and wear respirators | |
| 3.05 | Maintains personal protective equipment. | ability to select, adjust, inspect, wear and maintain personal equipment | |

**Task 4** **Uses common tools, machines and equipment safely.**

Trend: Increase in safety awareness and the delivery of customized safety courses for workers.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 4.01 | Operates common hand tools safely. | knowledge of general and specific practices for operating common hand tools | |
| | | ability to select appropriate tools for specific tasks | |
| 4.02 | Operates common portable power tools safely. | knowledge of general and specific safety practices for operating portable power tools | |
| | | knowledge of conditions that would generate electrical shocks | |
| | | knowledge of proper grounding | |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| | knowledge of safe practices for power tools operating with compressed air | |
| | ability to select appropriate tools for specific tasks | |
| 4.03 Operates powder-actuated tools safely. | knowledge of safe practices | |
| | knowledge of safety regulations governing the use of powder-actuated tools | |
| | ability to recognize the critical importance of adequate training before operating powder-actuated tools | |
| | ability to select appropriate fasteners and charges for specific tasks | |
| | ability to ensure that the surrounding environment is safe for using powder-actuated tools | |
| | ability to perform basic maintenance | |
| | knowledge of safe practices for transporting and storing powder-actuated tools and charges | |
| 4.04 Operates common machines and equipment safely. | knowledge of safe practices for operating common machines and equipment | |
| | knowledge of and ability to select, install, adjust, maintain and use protective devices | |
| | ability to perform safety inspections on machines and equipment | |
| | knowledge of safety zones and working space required around machines | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to recognize the critical importance of adequate training before operating specific machines | |
| | | ability to select appropriate machines for specific tasks | |
| | | ability to adjust and use sand-blasting equipment | |
| 4.05 | Uses various types of scaffolds safely. | knowledge of occupational health and safety regulations governing the use of scaffolds | scaffolds |
| | | knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds | |
| | | knowledge of load-bearing capacity of scaffolds | |
| | | knowledge of personnel protective devices | |
| | | ability to inspect power lines in order to prevent electrical shocks | |
| | | ability to inspect scaffolds, identify report problems | |
| | | ability to work on scaffolds safely | |
| | | ability to use harnesses, safety belts and lines | |
| 4.06 | Uses slings, hoists and ladders safely. | knowledge of occupational health and safety regulations governing the use of slings, hoists and ladders | ladders, hoists, hooks, slings |
| | | knowledge of safe rigging and hoisting procedures | |
| | | ability to inspect and select hoisting equipment, cables, slings, hooks and | |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
|  | other materials to suit load or task requirements |  |
|  | ability to set ladders safely |  |
|  | knowledge of and ability to store and maintain hoists and ladders |  |

## BLOCK B PLANNING WORK ACTIVITIES

### Task 5 Determines project requirements.

Trend: Performed by glaziers working for small contractors or those who are self-employed. In larger firms, this task is performed by a project manager.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 5.01 | Reads blueprints and specifications. | knowledge of and ability to read blueprints | pencil, paper, scale, ruler, calculator |
|  |  | ability to identify materials on blueprints by their respective symbols |  |
|  |  | ability to determine building location, size, extent of project and requirements |  |
|  |  | ability to comply with building codes and safety regulations |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 5.02 | Inspects site to determine job requirements. | ability to determine proper access to job site and storage requirements<br>knowledge of and ability to determine scaffolding and hoisting requirements<br>knowledge of and ability to determine the needs for personnel protective equipment<br>ability to determine needs for public safety<br>ability to communicate with job supervisors and other tradespersons<br>ability to determine needs for special tools and equipment | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 5.03 | Verifies drawings and specifications for compliance with building codes. | knowledge of building codes | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 5.04 | Verifies dimensions on job site. | ability to verify dimensions of rough openings<br>knowledge of architectural symbols<br>ability to identify architectural and structural details | measuring tape, pencil, log book, digital metre, laser beam level, electronic level |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
|  | ability to interpret specifications and other contract documents |  |
|  | ability to make fast accurate calculations using the imperial and metric units |  |
|  | ability to perform conversions from imperial to metric |  |
|  | ability to determine the integrity of plans |  |
|  | ability to determine critical dimensions on blueprint that need to be verified on site |  |
|  | ability to take and accurately record site measurements |  |
|  | ability to check angles, draw rough sketches of site plan with access to building |  |
|  | ability to verify floor levels |  |
|  | ability to interact with other tradespersons for coordinating work activities |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| 5.05 Report technical problems to appropriate authorities. | ability to communicate technical information accurately |  |
|  | knowledge of good interpersonal skills |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 6** **Determines materials, tools and equipment requirements.**

Trend: Frequent updating is required because of rapid changes in related products. Additionally, the ability to locate information is critical.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 6.01 | Prepares a list of materials required from blueprints and specifications. | knowledge of basic principles of estimating materials<br>ability to take off quantities of materials from blueprints and specifications | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 6.02 | Estimates cost of materials. | knowledge of and ability to estimate the cost of glass and other glass supporting materials<br>knowledge of basic mathematics | calculator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 6.03 | Prepares a list of required tools and equipment. | knowledge of and ability to determine tools and equipment requirements<br>knowledge of building practices and safety regulations | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 6.04 | Estimates the cost of tools and equipment required. | knowledge of and ability to estimate the cost of tools and equipment | electronic calculator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 6.05 | Orders materials, tools and equipment to meet job requirements. | ability to complete purchase orders and material requisition forms | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 6.06 | Schedules the delivery of tools, materials and equipment to job site. | ability to coordinate scheduling, ordering and delivery of materials to meet project requirements<br>ability to plan work activities | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 7 Determines labour requirements.

Trend: Is usually the responsibility of project managers on larger projects. Under increased pressure to demonstrate efficiency in order to stay competitive.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 7.01 | Estimates labour requirements from | knowledge of and ability to read and interpret blueprints | pencil, paper, charts, imperial and metric |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | blueprints and specifications. | knowledge of the International System of Units (SI) and drafting conventions<br>knowledge of the principles of orthographic projections<br>ability to determine type and quality of materials and labour from blueprints<br>ability to interpret drawings and specifications produced by the computer assisted drafting process<br>ability to recognize and determine various types of skills required to complete specific projects<br>ability to determine types and amount of work involved, working conditions and omissions or errors from blueprints and other contract documents | scale ruler, hand calculator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 7.02 | Estimates cost of labour to meet job requirements. | ability to estimate time required for completing projects<br>knowledge of job and working conditions that affect job costs<br>ability to analyze and estimate labour requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 7.03 | Schedules labour to meet project requirements. | knowledge of basic principles of scheduling<br>ability to plan work activities | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 7.04 | Estimates cost to meet safety requirements. | knowledge of safety codes and regulations | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 7.05 | Consults with other tradespersons. | ability to coordinate building activities involving other tradespersons<br>ability to communicate effectively<br>ability to demonstrate appropriate interpersonal skills | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK C HANDLING AND TRANSPORTING GLASS MATERIALS

### Task 8 Receives glass materials.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 8.01 | Wears protective clothing. | knowledge of protective devices available | hard hat, safety footwear |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.02 | Determines locations where glass materials are to be stored. | ability to assess load-bearing capacity of floor area where glass material is to be stored | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.03 | Selects lifting and carrying equipment. | knowledge of lifting capacity of shop or job site equipment<br>ability to determine size and weight from shipping label, bill of lading or invoice | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.04 | Unloads glass materials. | knowledge of safe practices for rigging<br>knowledge of and ability to control hoisting equipment<br>ability to carry on a visual inspection of the case or area for potential hazards<br>knowledge of the extremely dangerous conditions created by the weight factor | wire rope, slings, chokers or other rigging devices, forklift, overhead crane, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 8.05 | Uncrates glass materials. | ability to handle glass material safely | crowbar, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.06 | Performs visual inspection of glass materials received. | ability to inspect glass for damage | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.07 | Verifies glass materials received against invoice. | knowledge of and ability to read invoice and other shipping documents | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.08 | Submits requisition to replace materials not received or damaged. | ability to fill purchase orders and materials requisition slips | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 8.09 | Stores glass materials. | knowledge of correct bracing procedures | metal and wood braces, rope |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 9** **Transports cases of glass to job site.**

Trend: Increased costs of material coupled with increased awareness for quality have placed emphasis on safe handling.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 9.01 | Prepares shipping documents. | knowledge of and ability to determine shipping requirements and filling out shipping documents | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 9.02 | Determines location where glass materials are to be moved. | knowledge of good site layout<br>ability to interpret blueprints and communicate effectively with site superintendent and co- workers<br>ability to determine where glass should be moved<br>ability to schedule dates of arrival, availability of crane, number of people needed for move and types of rigging devices required | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 9.03 | Determines accessability to job site. | ability to inspect job site in order to determine clear and safe access | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 9.04 | Wears protective clothing. | knowledge of protective devices available | hard hat, safety footwear |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 9.05 | Crates glass materials for transportation. | knowledge of and ability to build crates<br>knowledge of safe practices for transporting glass materials<br>ability to protect glass from various types of mishaps | hammer, electric saw, steel square, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 9.06 | Loads cases on truck. | ability to select and use proper hoisting equipment according to load being lifted<br>ability to secure cases on truck appropriately<br>knowledge of safe practices for rigging and hoisting | wire rope, slings, chokers or other rigging devices, forklift, overhead crane, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 9.07 | Delivers cases of glass to job site. | knowledge of road safety<br>knowledge of safe practices when transporting glass materials on truck | delivery truck |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of safe practices for transporting glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 9.08 | Unloads cases on job site. | ability to select and use proper hoisting equipment according to load being lifted<br>ability to secure cases on truck appropriately<br>knowledge of safe practices for rigging and hoisting | wire rope, slings, chokers or other rigging devices, forklift, overhead crane, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 9.09 | Stores cases at designated locations. | ability to assess load-bearing capacity<br>knowledge of correct bracing procedures<br>knowledge of potential damage from weather elements<br>knowledge of proper procedures for protecting glass materials on job site<br>ability to store glass in safe areas on job site to avoid unnecessary damage | metal and wood braces, rope |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 10** **Transports single sheet of glass to job site.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.01 | Prepares shipping documents. | knowledge of and ability to determine shipping requirements and fill shipping documents | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | no | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.02 | Determines location where glass materials are to be moved. | knowledge of good site layout<br>ability to interpret blueprints and communicate effectively with job site superintendent and co-workers<br>ability to determine where glass should be moved<br>ability to schedule dates of arrival, availability of crane, number of people needed for move and types of rigging devices required | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.03 | Determines accessibility to job site. | ability to inspect job site in order to determine clear and safe access | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.04 | Wears protective clothing. | knowledge of protective devices<br>ability to select, adjust and wear protective devices | hard hat, safety footwear |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.05 | Selects carrying equipment. | ability to determine appropriate type of glass carrying equipment according to size and weight<br>knowledge of correct glass handling procedures | hand pads, rubber gloves, suction cups, slings, electric cups with hoist, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.06 | Loads glass on truck glass rack. | ability to clean resting pads<br>knowledge of compatible materials to avoid damage to glass<br>knowledge of safety procedures related to the transportation of large sheets of glass<br>knowledge of various types of truck glass racks available<br>knowledge of and ability to secure glass appropriately to rack | truck glass rack |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 10.07 | Delivers glass to job site. | knowledge of road safety<br>knowledge of safe practices when delivering glass materials on truck | delivery truck |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 10.08 | Unloads glass on job site. | knowledge of safe practices for lifting and carrying single sheets of glass | hand pads, rubber gloves, suction cups, slings, electric cups with hoist, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 10.09 | Stores glass at designated locations. | knowledge of potential damage from weather elements<br>ability to store glass in safe areas on job site to avoid unnecessary damage<br>ability to secure glass using braces or tie-downs | metal and wood braces, rope, cardboard, plywood, tarpaulins |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK D CUTTING AND SHAPING GLASS TO SPECIFICATIONS

### Task 11 Performs straight cuts on glass plates manually.

Trend: More emphasis on optimizing the use of materials due to increased cost.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 11.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.02 | Prepares cutting list. | knowledge of basic principles of estimating for glass materials<br>ability to take off quantities of materials from blueprints and specifications | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.03 | Lays out glass for cutting. | knowledge of and ability to optimize use of materials<br>ability to measure accurately | measuring tape, wax pencils |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 11.04 | Wears protective clothing. | knowledge of protective devices | hard hat, footwear, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.05 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to interpret work order<br>ability to select glass according to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.06 | Selects proper type of glass cutter. | knowledge of specific purposes for different types of cutters<br>ability to test cutters utilizing scrap glass<br>knowledge of the necessity to store cutter in protective sheath when not in use | glass cutter, cutting wheels, protective sheath, self-lubricating cutter, 118 degree wheel, 134 degree wheel, 154 degree wheel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.07 | Prepares work area for cutting. | ability to select and wear appropriate personal protective devices | cutting table, felt cover, broom, air hoses, shovel, pliers, breaking |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly prior to cutting<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure all required tools are available at the cutting table to avoid time delays in completing the job<br>ability to test all equipment prior to attempting cutting procedure | stick, tapper, suction cups, hoists, slings, laps, rubber gloves, dolly, scrap glass |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 11.08 | Cuts glass to size. | knowledge of the use of proper guides<br>ability to perform glass cuts (on site) on glass rack<br>ability to use clamps to secure guide in place<br>knowledge of various lubricant products and the ability to apply them effectively | lip-rule, L-square, light oil, kerosene, glass cutter, cutting table, breaking bar, glass run pliers |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of proper cutting procedures<br>ability to select the appropriate tool<br>ability to use glass run pliers<br>ability to tag cut glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.09 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates | suction cups, rubber gloves, slings, safety glasses |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 11.10 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 12 Performs curved cuts on glass plates free-hand.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 12.01 | Reads blueprints and works order to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.02 | Prepares cutting list. | knowledge of basic principles of estimating glass materials<br>ability to take off quantities of materials from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.03 | Prepares templates. | knowledge of plane geometry<br>knowledge of geometric construction<br>ability to bisect angles<br>ability to divide a line into several equal parts<br>ability to draw arcs, tangents, regular and irregular polygons<br>knowledge of and ability to enlarge and transfer irregular designs<br>ability to use common layout tools<br>ability to cut template to layout line | steel square, measuring tape, try-square, dividers, compasses, trammel heads, French curve, bench rule, combination square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 12.04 | Wears protective clothing. | knowledge of protective devices<br>ability to select, adjust and wear personal protective devices | gloves, hard hat, safety footwear, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.05 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to interpret work order requirements<br>ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.06 | Selects proper type of glass cutter. | knowledge of specific purposes for different types of cutters<br>ability to test cutter utilizing scrap glass<br>knowledge of the necessity to store cutter in protective sheath when not in use | glass cutter, cutting wheels, self lubricating cutter, 118 degree wheel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 12.07 | Prepares work area for cutting. | ability to select and wear appropriate personal protective devices<br>ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly prior to cutting<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure all required tools are available at the cutting table to avoid delays in completing the job<br>ability to test all equipment prior to attempting cutting procedure | cutting table, felt cover, broom, air hoses, shovel, pliers, breaking stick, tapper, suction cups, hoists, slings, laps, rubber gloves, dolly |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.08 | Cuts glass to required shape. | ability to place desired pattern under glass and score the surface with a cutter, utilizing tracing procedures<br>ability to utilize free-hand techniques to score glass<br>ability to apply correct pressure along the cut-line | pattern, glass cutter, tapper |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to use glass pliers for the removal of excess material<br>ability to tag cut glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.09 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 12.10 | Cleans work area. | knowledge of safe practices for handling and the disposal of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

### Task 13 Performs circular cuts on glass plates using a circular cutter.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 13.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 13.02 | Prepares cutting list. | knowledge of basic principles of estimating glazing materials<br>ability to take off quantities of materials from blueprints and specifications |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 13.03 | Adjust circular cutter for specified cuts. | ability to locate the centre of a circular pattern<br>ability to set the circular cutter to diameter<br>knowledge of setting the suction cup on centre mark | circle cutter, measuring devices, circular patterns, suction cups |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 13.04 | Prepares work area for cutting. | ability to select and wear appropriate personal protective devices<br>ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly prior to cutting<br>knowledge of damage caused if any debris is present between glass and table | cutting table, felt cover, broom, air hoses, shovel, pliers, breaking stick, tapper, suction cups, hoists, slings, laps, rubber gloves, dolly |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure all required tools are available at the cutting table to avoid delays in completing the job<br>ability to test all equipment prior to attempting cutting procedure | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 13.05 | Wears protective clothing. | knowledge of protective devices<br>ability to select, adjust and wear personal protective devices | gloves, hard hat, safety footwear, safety glasses |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 13.06 | Cuts circular design to specifications. | ability to interpret specifications<br>knowledge of required pressure to be applied | coolant, circle cutter, suction cups |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 13.07 | Removes waste material subsequent to circular cut being made. | knowledge of the procedures to remove waste material | tapper, circle cutter, glass cutter, coolant |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to use circle cutters and glass cutters | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 13.08 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 13.09 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 14 Cuts glass using a computerized cutter.**

Trend: Increased use of this technology, especially in large firms. The computerized optimizer cuts waste to a minimum.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 14.01 | Prepares work area for cutting. | ability to select and wear appropriate safety clothing<br>ability to inspect table top to ensure it is clean and free from debris | cutting table, felt cover, broom, air hoses, shovel, pliers, breaking stick, tapper, suction cups, hoists, slings, laps, rubber gloves |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of the necessity to clean table thoroughly prior to cutting | |
| | | knowledge of damage caused if any debris is present between glass and table | |
| | | ability to inspect work area | |
| | | knowledge of potential for serious injury if debris is left scattered in the workplace | |
| | | ability to test cutter prior to attempting cutting procedure | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 14.02 | Selects proper type and size of glass. | ability to identify various types of glass plates | |
| | | ability to interpret work order requirements | |
| | | ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 14.03 | Wears protective clothing. | knowledge of protective devices available | hard hat, safety glasses, safety footwear, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 14.04 | Sets up computerized cutter. | knowledge of proper set-up procedures for automatic cutter<br>ability to set up the cutter for the size and number of pieces required | operator's manual, automatic cutter |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 14.05 | Operates cutter. | knowledge of the capacity and limitations of the cutter<br>knowledge of correct glass handling procedures for loading and unloading equipment<br>ability to label glass for a specific job | automatic cutter, operator' manual, suction cups, laps, gloves, slings, measuring instruments |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 14.06 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to remove glass safely from cutting table with minimal risk of damage | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 14.07 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | yes | yes | yes | yes | NV | NV |

## Task 15 Performs edge work on glass plates.

Trend: This task is performed more frequently due to an increased use of exposed edge glass components.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 15.01 | Reads blueprints and work orders to determine job requirements. | ability to determine edge treatment required from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 15.02 | Prepares work area for cutting. | ability to select and wear appropriate safety clothing<br>ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure all required tools are available to avoid delays in completing the job | gloves, goggles, cutting table, felt cover, broom, air hoses, shovel, pliers, breaking stick, tapper |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 15.03 | Wears protective clothing. | knowledge of protective devices available | hard hat, safety glasses, safety footwear, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 15.04 | Selects proper edging. | ability to select the most economical edge treatment for each job<br>knowledge of arised and swiped edges and procedures to apply them<br>ability to select the proper sanding process, i.e. wet or dry |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 15.05 | Polishes the edge of glass by hand. | ability to perform swiped and arised edges by hand using a hand stone or emery cloth<br>knowledge of proper coolants<br>ability to select proper stone and emery cloth<br>knowledge of safe practices | emery cloth, hand stone, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 15.06 | Polishes the edge of glass using a portable sander. | knowledge of and ability to operate a portable belt sander safely<br>ability to select and install sanding belts<br>ability to adjust sander<br>ability to perform the roughing, smoothing, and polishing operations | belt sander, personal protective devices, emery paper |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to perform swiped, bevelled, mitred and bullnose, round and pencil polished edges | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 15.07 | Polishes glass using a large floor belt sander. | knowledge of and ability to operate a large floor belt sander safely | belt sander, personal protective devices, respirator mask |
| | | ability to select and install sanding belts | |
| | | ability to perform various edge works | |
| | | knowledge of various sanding belts available | |
| | | ability to change and align belts | |
| | | knowledge of potential hazards during sanding | |
| | | knowledge of the proper sanding angles to achieve the specified edge | |
| | | ability to apply the required speed and pressure to achieve the desired results | |
| | | ability to identify overheating conditions | |
| | | ability to apply coolant during the grinding process to avoid glass overheating | |
| | | ability to position the glass at the required angle on the rollers | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to apply sander along edge of glass with steady free hand movements at the required angle | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 15.08 | Cleans glass with water. | ability to wash all chips and abrasive materials from glass | rubber gloves, water hose |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 15.09 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates | suction cups, laps, rubber gloves, slings |
| | | ability to remove glass safely from cutting table with minimal risk of damage | |
| | | ability to distinguish and label glass for a specific job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 15.10 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 16** **Drills holes in glass using carbide and diamond bits.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 16.01 | Reads blueprints and work orders to determine job requirements. | ability to determine edge treatment required from blueprints and work orders<br>ability to determine the size and location of holes | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 16.02 | Prepares work area for drilling. | ability to inspect table to ensure it is firm and flat and is equipped with appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid delays in completing the job | gloves, goggles, cutting table, felt cover, broom, air hoses, pliers, breaking stick, tapper |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 16.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to keep waste to minimum<br>ability to interpret work orders<br>ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 16.04 | Lays out position of holes. | ability to set up position of holes from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 16.05 | Sets up drilling equipment. | ability to select drilling equipment<br>knowledge of the cutting action of carbide and diamond bits | drilling machine, carbide bit, diamond bit |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 16.06 | Wears personal protective equipment. | knowledge of protective devices available<br>ability to select, adjust and wear personal protective equipment | hard hat, safety glasses, safety footwear, gloves, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 16.07 | Bores holes in glass. | knowledge of safe practices | hard hat, safety glasses, safety footwear, gloves, respirator mask, overhead glass drilling machine, diamond bit, carbide bit, suction cups, laps, gloves, slings |
|  |  | ability to score the glass with a carbide bit |  |
|  |  | knowledge of using turpentine as a coolant |  |
|  |  | ability to handle glass safely |  |
|  |  | knowledge of the necessity to complete drilling from the reverse side to prevent spalling |  |
|  |  | knowledge of potential danger to glass from grit and debris |  |
|  |  | ability to remove waste particles from glass without scratching surface |  |
|  |  | knowledge of the automatic feed |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 16.08 | Countersinks holes, as required. | ability to set up drilling equipment for countersinking glass materials | drilling machine, countersink |
|  |  | knowledge of safe working practices |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 16.09 | Cleans glass with water. | ability to wash all chips and abrasive materials from glass | rubber gloves, water hose |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 16.10 | Stacks cut glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to label glass for a specific job | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 16.11 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 17 Drills holes in glass using a brass tube bit.**

Trend: This technique is very seldom used because of the high risk of damaging the glass surface.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.01 | Reads blueprints and work orders to determine job requirements. | ability to determine treatment required from blueprints and work orders<br>ability to determine the size and location of holes | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.02 | Prepares work area for drilling. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid delays in completing the job | gloves, goggles, cutting table, broom, air hoses, pliers, breaking stick, tapper |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to keep waste to minimum<br>ability to interpret work orders<br>ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.04 | Lays out position of holes. | ability to set up position of holes from blueprints and work orders |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 17.05 | Builds a circular dam around the area to be drilled. | knowledge of the types of sealants available to construct the dam | putty, glazing tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 17.06 | Sets up drilling equipment. | ability to select drilling equipment<br>knowledge of the cutting action of the brass tube bit<br>ability to set up tripod drill on glass surface and align bit with centre marks | drilling machine, brass tube bit |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 17.07 | Fills dam with drilling compound. | knowledge of drilling compound<br>ability to determine the appropriate amounts of drilling compound and water required during the drilling process |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.08 | Wears personal protective equipment. | knowledge of protective devices available<br>ability to select, adjust and wear personal protective equipment | goggles, safety footwear, gloves, respirator mask, hard hat |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 17.09 | Bores holes using the brass tube bit. | knowledge of drilling compound<br>ability to determine the appropriate amounts of drilling compound and water required during the drilling process | brass tube bit |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 17.10 | Immediately cleans glass surface once drilling is completed. | knowledge of damage caused by grinding compound left on glass | rubber gloves, water hose |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 17.11 | Stacks drilled glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to distinguish and label glass for a specific job | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 17.12 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | glass pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 18 Notches glass plates.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 18.01 | Identifies the location of notches on glass. | ability to interpret blueprints, sketches and work orders and transfer the information to glass | measuring tape, felt pen or grease pencil, square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 18.02 | Prepares work area for notching. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt | gloves, goggles, felt cover, air hoses, broom, shovel |
|  |  | knowledge of the necessity to clean table thoroughly |  |
|  |  | knowledge of damage caused if any debris is present between glass and table |  |
|  |  | ability to inspect surrounding work area |  |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid delays in completing the job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to keep waste to minimum<br>ability to interpret work orders<br>ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.04 | Wears protective clothing. | knowledge of protective devices available<br>ability to select and wear appropriate safety clothing | hard hat, safety footwear, gloves, safety glasses, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 18.05 | Drills a hole at the apex of the area being notched. | knowledge of correct and safe drilling procedures | glass drill, coolant |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.06 | Cuts or saws along score lines towards hole drilled. | ability to operate a diamond cutoff saw, glass cutters and glass pliers | glass cutter, glass pliers, diamond cutoff saw |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.07 | Polishes cut edges. | ability to smooth edges using emery cloths | protective clothing |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.08 | Cleans glass with water. | ability to wash all chips and abrasive materials from glass | rubber gloves, water hose |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 18.09 | Stacks notched glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to label glass for a specific job | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 18.10 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 19 Grinds finger pull in glass plate.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 19.01 | Identifies the location of finger pull on glass plate. | ability to interpret blueprints, sketches and work orders and transfer the information to glass | measuring tape, felt pen, grease pencil, square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 19.02 | Prepares work area for grinding finger pull. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area | gloves, goggles, felt cover, air hoses, broom |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid delays in completing the job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 19.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to keep waste to minimum<br>ability to interpret work order requirements<br>knowledge of and ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 19.04 | Wears protective clothing. | knowledge of protective devices available<br>ability to select, adjust and wear personal protective equipment | hard hat, safety footwear, safety glasses, gloves, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 19.05 | Sets up automatic finger pull machine. | knowledge of and ability to set up automatic finger pull machine | measuring tape, finger pull machine | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 19.06 | Cuts notch in glass. | ability to operate an automatic finger pull machine | finger pull machine | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 19.07 | Washes grit from glass immediately after cut is completed. | knowledge of damage caused by grit and other foreign substances on glass surfaces | | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 19.08 | Stacks machined glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to label glass for a specific job | suction cups, laps, rubber gloves, slings | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 19.09 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 20 Bends glass to specifications. (NOT COMMON CORE)

Trend: Due to changes in architectural features this task is becoming more common; however, it is performed by glaziers employed by specialized contractors.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.02 | Prepares work area for bending glass. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid delays in completing the job | gloves, goggles, felt cover, air hoses, broom |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to keep waste to minimum<br>ability to interpret work order requirements<br>knowledge of and ability to select glass relative to colour, type and thickness |  |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 20.04 | Wears personal protective equipment. | knowledge of protective devices available<br>ability to select, adjust and wear personal protective equipment | hard hat, safety footwear, safety glasses, gloves |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 20.05 | Cuts glass to size. | knowledge of the bending property of glass (contraction and shrinkage)<br>knowledge of safe practices for cutting glass | measuring tape, straight-edge, glass cutter |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.06 | Prepares mould for bending. | ability to select appropriate mould | moulds |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.07 | Bends glass to required shape. | knowledge of and ability to heat glass at proper temperature<br>ability to place glass properly on mould for bending<br>knowledge of proper techniques for cooling glass<br>knowledge of safe practices for bending glass<br>knowledge of the characteristics of glass | gloves, safety glasses, apron |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.08 | Finishes edges of glass. | ability to finish edges of glass by hand or using a portable sander | |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 20.09 | Cleans glass surface. | ability to wash all chips and abrasive materials from glass | rubber gloves, water hose |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 20.10 | Stacks bent glass. | knowledge of proper and safe practices for stacking glass plates<br>ability to label glass for a specific job | suction cups, laps, rubber gloves, slings |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 20.11 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

## BLOCK E PERFORMING SPECIALIZED TREATMENTS TO GLASS PLATES

### Task 21 Etches glass using chemicals.

Trend: In general this task is performed by glaziers employed by specialized contractors.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 21.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 21.02 | Draws required design. | ability to apply masking material to glass<br>ability to draw free-hand<br>knowledge of plane geometry | T-square, set square, French curves, compass, dividers, trammel heads |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 21.03 | Cuts out design. | ability to cut out designs from masking material applied to glass | utility knives, exacto knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 21.04 | Applies chemicals. | knowledge of WHMIS | rubber gloves, respirator mask. |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of and ability to select, adjust and wear personal protective equipment when using chemicals<br>knowledge of and ability to apply the correct type of chemicals in proper amount to produce required effects<br>knowledge of safe practices when handling chemicals | goggles, rubber apron, rubber boots, eye was |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 21.05 | Washes glass of chemicals. | knowledge of safe practices<br>knowledge of the effects of chemical products on glass materials | water hose, rubber gloves/boots/apron, goggles, eye wash |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 21.06 | Cleans glass surfaces. | ability to peel off masking materials<br>ability to wash all abrasive material from glass | rubber gloves/boots/apron, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 21.07 | Stores etched glass. | knowledge of proper and safe practices for stacking and storing etched glass plates | suction cups, laps, rubber gloves, slings |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to label glass for a specific job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 21.08 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 22 Sand-blasts decal designs on glass.**

Trend: This task is performed by glaziers employed by specialized contractors.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 22.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.02 | Prepares work area for sand-blasting. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly | gloves, goggles, felt cover, air hoses |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of damage caused if any debris is present between glass and table | |
| | | ability to inspect surrounding work area | |
| | | knowledge of the potential for serious injury if debris is left scattered in the workplace | |
| | | ability to ensure that all required tools are available to avoid time delays in completing the job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 22.03 | Selects proper type and size of glass. | ability to identify various types of glass plates | |
| | | ability to apply basic arithmetic to determine size of glass required | |
| | | ability to interpret work orders | |
| | | knowledge of and ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 22.04 | Wears personal protective equipment | ability to select, adjust and wear protective equipment properly | safety glasses, safety footwear, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 22.05 | Cuts glass to size. | knowledge of safe practices for cutting glass | measuring tape, straight-edge, glass cutter |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.06 | Draws required design. | ability to apply masking material to glass<br>ability to draw free-hand<br>knowledge of plane geometry | T-square, set square, French curves, compass, divider, trammel heads |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.07 | Cuts out design. | ability to cut out designs from masking material applied to glass | utility knives, exacto knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.08 | Carves designated areas using sand-blasting equipment. | knowledge of safe practices<br>knowledge of and ability to sand-blast glass for producing required effects<br>ability to adjust and maintain sand-blasting equipment<br>knowledge of and ability to select proper grid and air pressure to produce desired effects | sand-blasting equipment, personal protective equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 22.09 | Cleans glass surfaces. | ability to peel off masking materials<br>ability to wash all abrasive material from glass | rubber gloves/boots/ apron, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.10 | Stores sand-blasted glass. | knowledge of proper and safe practices for stacking and storing sand-blasted glass plates<br>ability to label glass for a specific job | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 22.11 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 23** **Paints on glass to specifications.**

Trend: This task is essentially performed by glaziers employed by specialized contractors.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 23.01 | Reads work orders. | ability to determine job requirements from work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 23.02 | Prepares work area for painting on glass. | ability to select and wear appropriate clothing | gloves, goggles, felt cover, air hoses, broom |
| | | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt | |
| | | knowledge of the necessity to clean table thoroughly | |
| | | knowledge of damage caused if any debris is present between glass and table | |
| | | ability to inspect surrounding work area | |
| | | knowledge of the potential for serious injury if debris is left scattered in the workplace | |
| | | ability to ensure that all required tools are available to avoid time delays in completing the job | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 23.03 | Selects proper type and size of glass. | ability to identify various types of glass plates | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to apply basic arithmetic to determine size of glass required<br>ability to interpret work orders<br>ability to select glass relative to colour, type and thickness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 23.04 | Wears protective clothing. | ability to select, adjust and wear protective clothing properly | safety footwear, safety glasses, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 23.05 | Cuts glass to size. | knowledge of safe practices for cutting glass | measuring tape, straight-edge, glass cutter |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 23.06 | Finishes edges of glass. | ability to finish edges of glass by hand or using a portable sander<br>knowledge of various edge treatments<br>knowledge of safe practices<br>knowledge of and ability to select proper grit | portable belt sander, emery cloth, goggles, rubber gloves/boots/ apron, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 23.07 | Cleans glass using chemical products. | knowledge of WHMIS<br>knowledge of safe practices when handling chemicals | rubber gloves/apron/ boots, goggles, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 23.08 | Applies paint on glass. | knowledge of safe practices<br>ability to apply paint on glass surfaces using curtain coating method, spraying technique, rollers and brushes<br>knowledge of curing techniques for different types of paint | curtain coating equipment, spraying equipment, rollers, brushes, gloves, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 23.09 | Stacks painted glass. | knowledge of proper and safe practices for stacking and storing glass plates<br>ability to label glass for a specific job<br>knowledge of and ability to stack painted glass | suction cups, laps, rubber gloves, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 23.10 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | no | yes | yes | NV | NV |

**Task 24 Tempers glass to specifications. (NOT COMMON CORE)**

Trend: This task is performed by glaziers employed by specialized contractors.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders<br>(NOT COMMON CORE) | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.02 | Prepares work area for tempering glass. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt<br>knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area | felt cover, air hoses, broom |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
|  | knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid time delays in completing the job<br>**(NOT COMMON CORE)** |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | |
|---|---|---|
| 24.03 Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to interpret work orders<br>ability to select glass relative to colour, type and thickness<br>**(NOT COMMON CORE)** |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | |
|---|---|---|
| 24.04 Wears protective clothing. | ability to select, adjust and wear protective clothing properly<br>**(NOT COMMON CORE)** | safety footwear, safety glasses, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.05 | Cuts glass to size. | knowledge of safe practices for cutting glass<br>**(NOT COMMON CORE)** | measuring tape, straight-edge, glass cutter, lubricant |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.06 | Machines glass as required. | ability to drill, grind and notch glass plates<br>knowledge of safe practices<br>**(NOT COMMON CORE)** | drill, grinders, glass cutter, emery cloth, personal protective devices |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.07 | Finishes edges of glass. | ability to finish edges of glass by hand or using a portable sander<br>knowledge of various edge treatments<br>knowledge of safe practices<br>knowledge of and ability to select proper grit<br>**(NOT COMMON CORE)** | portable belt sander, floor belt sander, emery cloth, goggles, rubber gloves, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 24.08 | Heats glass. | knowledge of safe practices<br>knowledge of appropriate temperature for tempering glass | oven, personal protective equipment |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of and ability to operate an oven | |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 24.09 | Chills glass. | knowledge of safe practices<br>knowledge of correct and safe procedure for cooling glass<br>knowledge of the characteristics of glass | cool air blower |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 24.10 | Cleans glass surface. | ability to wash all abrasive material from glass | rubber gloves, goggles, rubber apron |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 24.11 | Stacks tempered glass. | knowledge of proper and safe practices for stacking and storing glass plates | suction cups, laps, rubber gloves, slings |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | ability to label glass for a specific job<br>**(NOT COMMON CORE)** |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 24.12 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials<br>**(NOT COMMON CORE)** |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

**Task 25 Laminates glass to specifications. (NOT COMMON CORE)**

Trend: This task is performed by specialized shop workers.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 25.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders<br>**(NOT COMMON CORE)** |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 25.02 | Prepares work area for laminating glass. | ability to inspect table top to ensure it is firm and flat and is equipped with an appropriate covering such as a thin layer of felt | gloves, goggles, felt cover, air hoses, broom, shovel |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of the necessity to clean table thoroughly<br>knowledge of damage caused if any debris is present between glass and table<br>ability to inspect surrounding work area<br>knowledge of the potential for serious injury if debris is left scattered in the workplace<br>ability to ensure that all required tools are available to avoid time delays in completing the job<br>**(NOT COMMON CORE)** | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 25.03 | Selects proper type and size of glass. | ability to identify various types of glass plates<br>ability to apply basic arithmetic to determine size of glass required<br>ability to interpret work order requirements<br>ability to select glass relative to colour, type and thickness<br>**(NOT COMMON CORE)** | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 25.04 | Wears personal protective equipment. | ability to select, adjust and wear personal protective equipment properly | safety footwear, safety glasses, gloves |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 25.05 | Cuts glass to size. | knowledge of safe practices for cutting glass | measuring tape, straight-edge, glass cutter, lubricant |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 25.06 | Cleans glass surfaces. | ability to wash all chips and abrasive materials from glass | rubber gloves, water hose |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 25.07 | Places laminated vinyl membrane between glass plates. | ability to follow manufacturers' specifications |  |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 25.08 | Places laminated glass in autoclave. | ability to determine the required amount of heat and pressure for laminated glass<br>ability to set autoclave<br>knowledge of safe practices for lifting, placing and removing laminated glass from the autoclave | autoclave, personal protective equipment |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 25.09 | Finishes edges of glass. | ability to finish edges of glass by hand or using a portable sander<br>knowledge of and ability to select proper grit | portable belt sander, floor belt sander, emery cloth, goggles, rubber gloves, respirator mask |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 25.10 | Stacks laminated glass. | knowledge of proper and safe practices for stacking and storing glass plates | suction cups, laps, rubber gloves, slings |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 25.11 | Cleans work area. | knowledge of safe practices for handling and disposing of waste materials<br>**(NOT COMMON CORE)** | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

## BLOCK F FABRICATING AND INSTALLING SUPPORT STRUCTURES

### Task 26 Prepares job site.

Trend: Good communication and interpersonal skills required in order to interact with on-site workers and other tradespersons.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 26.01 | Reads blueprints and work orders to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 26.02 | Inspects work site to determine job requirements. | knowledge of Construction Safety Code<br>ability to demonstrate good interpersonal skills | |

| Sub-tasks | | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to communicate effectively with site supervisor and other tradespersons | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 26.03 | Determines scaffolding needs. | knowledge of occupational health and safety regulations governing the use of scaffolds | |
| | | knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds | |
| | | knowledge of personnel protective devices | |
| | | ability to inspect power lines in order to prevent electrical shocks | |
| | | ability to inspect scaffolds | |
| | | ability to identify and report problems | |
| | | ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 26.04 | Determines finished floor mark, bench-mark, centre line and grid lines. | ability to determine from blueprints and the general contractor applicable structural information, i.e. finished floor mark, bench-mark, centre line, grid lines | |
| | | ability to interpret blueprints | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of construction terminology | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 26.05 | Provides for the storage of materials, tools and equipment. | ability to set up temporary storage areas for materials and equipment | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 26.06 | Sets up temporary fabricating shop on job site, if necessary. | knowledge of equipment and materials required for job<br>ability to plan, organize and prepare the work area | cutoff saw, carbide blade, cutting bench, saw horses, drill bits, drill, screws, screw-gun, screwdriver, personal protective equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 27 Fabricates curtain wall frames from stock length material.

Trend: The introduction of complex glazing system requires good product knowledge.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.02 | Prepares cutting list. | ability to interpret blueprints and prepares a list of all cuts required to fabricate frame to size<br>knowledge of framing fabrication<br>ability to plan and organize | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 27.03 | Cuts vertical framing members to length. | ability to operate an aluminum cutoff saw<br>ability to interpret blueprints | goggles, measuring tape, cutoff saw, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 27.04 | Attaches spigots to vertical framing members. | ability to fabricate aluminum framing | measuring tape, jig, drill, drill bits, screws, screw-gun, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 27.05 | Cuts horizontal framing members to length. | knowledge of aluminum fabrication<br>ability to operate power tools | measuring tape, cutoff saw, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.06 | Drills clearance holes in horizontal framing member. | ability to determine drill size<br>ability to operate power drill | power drill, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.07 | Joins vertical and horizontal framing members. | ability to join horizontal framing members to vertical framing members | clamps, screw-gun, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.08 | Applies proper sealant around spigots. | ability to select and apply proper sealants | sealant, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.09 | Installs back-up blocks. | knowledge of expansion sleeves<br>ability to properly position back-up blocks | measuring tape, drill, drill bits, screw-gun, screwdriver, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 27.10 | Installs sheer blocks. | knowledge of sheering action and purpose of sheer blocks | measuring tape, drill, drill bits, screw-gun, screwdriver, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27.11 | Fastens expansion sleeve into top of vertical members. | knowledge of expansion sleeves | measuring tape, drill, drill bits, screw-gun, screwdriver, grease stick | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 27.12 | Cuts pressure p[illegible], as required. | knowledge of critical tolerances | measuring tape, cutting list, cutoff saw, grease stick | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 27.13 | Drills vent and drainage holes. | knowledge of efficient positioning for vent and drain holes | measuring tape, drill, drill bits, file | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 27.14 | Cuts snap covers to allow for sufficient expansion and contraction. | knowledge of sizing adjustments caused by temperature fluctuations on metal | measuring tape, cutoff saw, grease stick | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 27.15 | Drills drainage holes in snap covers. | knowledge of curtain wall drainage system<br>ability to operate power tools safely | measuring tape, drill, drill bits | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 28 Fabricates curtain wall frames using prefabricated material.

Trend: The use of prefabricated panels is increasing the difference in skill requirements for shop and site glaziers.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 28.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 28.02 | Sorts out prefabricated framing components. | ability to verify that all components are present, utilizing a numbered checklist | saw horses |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 28.03 | Assembles prefabricated component to form frames. | knowledge of prefabricated framing assembly<br>ability to assemble frame | screwdriver, wrenches, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 28.04 | Applies sealants to all joints around spigots. | ability to select and apply proper sealant | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 28.05 | Installs back-up block or expansion sleeve, when necessary. | ability to read blueprints and determine the necessary accessories | back-up block, expansion sleeve, screw-gun, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 29 Installs spandrel panels into curtain wall frames before attaching unit to structure.**

Trend: Increased use of pre-installed panels into curtain walls on large building projects.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.02 | Secures metal back pan into spandrel location. | knowledge of various fastening methods for back pans | drill, drill bits, screwdriver, pop rivet gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.03 | Fastens glazing adaptor into proper location. | knowledge of various types of adaptors available | drill, drill bits, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.04 | Installs insulation onto back pan. | knowledge of insulating requirements | utility knife, respiratory mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.05 | Secures corner blocks to panel using sealant. | knowledge of corner block installation<br>ability to select and apply proper sealant | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.06 | Installs glazing gasket or tape to glazing adaptor. | ability to select and apply properly sized gasket or tape | side cutters |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.07 | Places spandrel panel in structural opening. | knowledge of glazed curtain wall installation procedures | setting blocks, suction cups, rubber gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 29.08 | Fastens stops to frame, holding spandrel panel. | ability to fasten pressure plates | screws, screw-gun, stops |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 30 Installs glass into curtain wall frames before attaching unit to structure.**

Trend: Increased use of preglazed panels into curtain walls on large building projects.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 30.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 30.02 | Secures corner blocks to frame using sealants. | knowledge of corner block installation<br>ability to select and apply proper sealant | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 30.03 | Installs glazing gasket or tape to frame. | ability to select and apply properly sized gasket or tape | side cutters |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 30.04 | Places glass into frame. | knowledge of glazed curtain wall installation technique<br>ability to ensure appropriate clearances | suction cups, rubber gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 30.05 | Fastens stops to frame, holding glass in position. | ability to fasten pressure plates | screw-gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 31 Installs aluminum curtain wall framing members to structure using the grid system.

Trend: Spot welding is usually performed by certified welders.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 31.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 31.02 | Determines the location of vertical member. | ability to interpret blueprints<br>knowledge of the grid system | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 31.03 | Attaches vertical member to structural anchor. | knowledge of possible locations of wind load and dead load anchors: floor slab, spandrel beam<br>ability to secure vertical members | wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 31.04 | Secures the vertical members. | ability to work from given reference points and correctly install vertical members using grid lines, centre lines or bench-marks | plumb bob, measuring tape. wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 31.05 | Secures horizontal members to the already installed vertical members. | ability to join vertical and horizontal aluminum curtain wall members<br>ability to install aluminum curtain wall framing members<br>ability to work from given reference points, and properly adjust horizontal members to correct bench-mark dimension<br>ability to keep all members plumb and level | screw-gun, screwdriver, wrenches, builder's level, plumb bob, measuring tape, shims |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 31.06 | Assembles remaining vertical and horizontal members. | ability to install complete curtain wall frame | builder's level, plumb bob, measuring tape, shims |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 31.07 | Secures the assembled curtain wall in position. | knowledge of curtain wall assembly | wrenches, plumb bob, measuring tape |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to secure vertical members at expansion joint<br>ability to retain the necessary squareness of wall | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 31.08 | Makes final adjustments to structure. | ability to verify frame for plumb and level | plumb bob, builder's level, measuring tape, torque wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 31.09 | Spotwelds deadlock anchor. | knowledge of methods to secure wind load and deadlock anchors<br>knowledge of safe practices for welding<br>ability to use welding equipment safely<br>ability to select and wear personal protective equipment | welding goggles, arc welder, face shield |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

**Task 32 Installs aluminum curtain wall to building structure using the panel system.**

Trend: Increased use of this procedure due to pressing demands for efficiency and cost-effectiveness.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 32.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.02 | Selects proper hoisting equipment. | knowledge of hoisting equipment<br>knowledge of safe practices and regulations | block and tackle, ropes, slings, crane |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.03 | Attaches hoisting equipment to structural anchors. | ability to locate and connect frame to anchors | block and tackle, ropes, slings, crane |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.04 | Hoists frame in position. | knowledge of safe practices related to rigging and hoisting<br>knowledge of personal safety<br>knowledge of hand signalling techniques | slings, block and tackle, ropes, crane |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 32.05 | Sets the frame plumb and level. | ability to work from given reference points, i.e. grid lines, bench-marks | plumb bob, builder's level, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.06 | Fastens frame to anchors. | knowledge of construction techniques for connecting aluminum curtain wall frame to wind load and dead load anchors | shims, hand wrenches, power wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.07 | Attaches the next frame to the original, in like fashion (split mullion). | knowledge of the panel system<br>knowledge of construction techniques for the installation of curtain walls | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.08 | Levels, plumbs and fastens frame to anchors. | knowledge of the necessity to connect frames at expansion joint | builder's level, plumb bob, measuring tape, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 32.09 | Secures subsequent frames on top of others | knowledge of the necessity to connect frames at expansion joint | |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| until structure is completed. | | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 33 Finishes curtain wall after framing members and glass are installed.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 33.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 33.02 | Sets up a swingstage scaffold. | knowledge of scaffolding and related safety factors<br>ability to properly install the swingstage scaffold and its accessories | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 33.03 | Installs spandrel panel. | ability to glaze spandrel panel properly | swingstage scaffold and accessories, side cutters, screw-gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 33.04 | Installs all necessary snap covers. | knowledge of installation procedures for installing snap covers | rubber hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 33.05 | Installs any necessary flashing, column covers and fire stops. | ability to fasten aluminum flashing, column covers and fire stops | drill, drill bits, screwdriver, pop rivet gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 33.06 | Caulks all areas that require sealant. | ability to identify all areas that require sealants<br>ability to apply sealant properly | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 34** **Fabricates aluminum storefronts, barrel vaults, solariums and commercial window systems.**

Trend: Workers in this occupation must keep abreast of changes in components and complex hardware. Increase demand for renovating existing structures.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.02 | Prepares cutting list of materials. | ability to interpret blueprints and prepare a list of all materials required<br>knowledge of framing fabrication<br>ability to plan and organize | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.03 | Determines hardware required. | knowledge of common hardware used for aluminum storefronts, barrel vaults, solariums and window systems<br>ability to read specifications | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.04 | Lays out materials. | knowledge of basic setting-out procedures<br>ability to lay out rods<br>ability to measure accurately | engineer's square, scribers, pencils, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.05 | Cuts materials to size. | ability to operate an aluminum cutoff saw<br>knowledge of safe practices | goggles, cutoff saw |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to tag all pieces accurately | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.06 | Drills holes in framing members for all anchor locations. | ability to determine drill size<br>ability to operate power drill<br>knowledge of safe practices | power drill, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.07 | Strengthens aluminum framing by inserting steel reinforcements. | ability to fasten steel reinforcements securely to aluminum<br>knowledge of when reinforcing is required | drill, drill bits, screw-gun, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.08 | Fastens spigot to the correct location on aluminum extrusion. | ability to fasten spigots | drill, drill bits, screwdriver, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 34.09 | Assembles frame according to job requirements. | knowledge of construction techniques and procedural steps for assembling frames | screw-gun, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 35** **Installs aluminum storefronts, barrel vaults, solariums and commercial window systems pre-assembled panel.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 35.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 35.02 | Determines scaffolding needs. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds<br>knowledge of personal protective devices<br>ability to inspect power lines in order to prevent electrical shocks<br>ability to inspect scaffolds<br>ability to identify and report problems<br>ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 35.03 | Verifies the size of frames against rough opening. | ability to measure accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 35.04 | Lays out position of frame in rough opening. | ability to measure and lay out accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 35.05 | Sets frame into opening. | ability to use hoisting equipment<br>knowledge of safe hoisting practices | block and tackle, ropes, slings, crane, shims |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 35.06 | Drills holes into frame. | ability to use power drills<br>ability to determine size of holes for drilling | goggles, drill bits, power drill |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 35.07 | Secures frame into structural opening. | knowledge of hardware and other fastening devices | screw-gun, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 35.08 | Applies caulking. | knowledge of the properties of different types of caulkings<br>ability to select and apply caulking<br>knowledge of safe practices | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 36 Installs aluminum storefronts and commercial window systems one piece at a time.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 36.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 36.02 | Determines scaffolding needs. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds | |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | knowledge of personal protective devices<br>ability to inspect power lines in order to prevent electrical shocks<br>ability to inspect scaffolds<br>ability to identify and report problems<br>ability to work on scaffolds safely |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.03 | Verifies the size of frames against rough opening. | ability to measure accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.04 | Lays out position of frame in rough opening. | ability to measure and lay out accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.05 | Secures aluminum sill to rough opening. | knowledge of appropriate clearance required between framing member and rough opening | drills, countersink bit, drill bits, level, screwdriver, screw-gun, measuring tape, chalk line, explosive actuated tool, drive pins |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 36.06 | Secures aluminum header to rough opening. | ability to install header level | drills, countersink bit, drill bits, level, screwdriver, screw-gun, measuring tape, chalk line, explosive actuated tool, drive pins |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.07 | Secures side jambs in position. | ability to install components level, plumb and square | drills, countersink bit, drill bits, level, screwdriver, screw-gun, measuring tape, chalk line, explosive actuated tool, drive pins |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.08 | Verifies that all components are level and square in structural opening. | ability to inspect framing members for plumb, level and squareness | level |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 36.09 | Applies caulking. | knowledge of the properties of different types of caulkings<br>ability to select and apply caulking<br>knowledge of safe practices | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 37 Fabricates and installs entranceways.**

Trend: Employees need to be more informed in order to comply with federal requirements for barrier-free access to public buildings.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 37.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints<br>knowledge of federal government requirements for barrier-free access to public buildings | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 37.02 | Fastens anchors to framing members. | ability to fasten anchors | drill, drill bits, screwdriver, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 37.03 | Determines scaffolding and hoisting equipment needs. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds<br>knowledge of personal protective devices | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to inspect power lines in order to prevent electrical shocks | |
| | | ability to inspect scaffolds | |
| | | ability to identify and report problems | |
| | | ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 37.04 | Verifies the size of frames against rough opening. | ability to measure accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 37.05 | Lays out position of frame in rough opening. | ability to measure and lay out accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 37.06 | Secures frame into structural opening. | knowledge of hardware and other fastening devices | screw-gun, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 37.07 | Verifies that all components are level and square in the opening. | ability to inspect framing members for plumb and level | level |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 37.08 | Installs hardware. | knowledge of various types of hardware<br>ability to install hardware according to manufacturers' specifications<br>ability to adjust hardware as required | screwdriver, portable drill, drill bits, measuring tape, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 37.09 | Applies caulking. | knowledge of the properties of different types of caulkings<br>ability to select and apply caulking<br>knowledge of safe practices | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 38** **Fabricates framing for slope-glazed and skylite installations using stock length material.**

Trend: Due to complex design features more advanced, mathematical skills in geometry, trigonometry and algebra are required. Increased demand for slope-glazing and skylites.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 38.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 38.02 | Prepares cutting list of materials. | ability to interpret blueprints and prepare a list of all materials required to fabricate frame<br>knowledge of framing fabrication<br>ability to plan and organize | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 38.03 | Lays out materials to be cut. | knowledge of basic setting-out procedures<br>ability to lay out rods<br>ability to measure accurately<br>knowledge of basic geometry, trigonometry and algebra | scribers, pencils, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 38.04 | Cuts material to size. | knowledge of the correct clearances required<br>ability to interpret blueprints | measuring tape, metal cutoff saw |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | ability to operate power equipment safely |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 38.05 | Drills holes in framing member. | ability to determine drill size<br>ability to operate power drill | power drill, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 38.06 | Fastens anchor to aluminum extrusion. | ability to fasten spigots to anchors | drill, drill bits, screwdriver, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 38.07 | Assembles frames to specifications. | knowledge of frame fabrication<br>ability to apply sealant before joining extrusions | cutoff saw, drill, drill bits, countersink bit, screwdriver, screw-gun, grease stick, clamps |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 39** **Fabricates framing for slope-glazed and skylite installations using prefabricated frame.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 39.01 | Reads blueprints and specifications. | knowledge of and ability to determine job requirements from blueprints and work orders | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 39.02 | Sorts out prefabricated components to form frame. | ability to determine frame layout pattern from drawings | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 39.03 | Assembles prefabricated components to form frame. | ability to assemble a prefabricated knock-down frame<br>ability to apply sealant and attach extrusions to applicable spigots | clamps, screw-gun, grease stick |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 39.04 | Verifies completed frame fits structural opening. | ability to double check measurements as frame size was determined by blueprint at factory | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 39.05 | Applies sealants to all joints. | knowledge of the properties of sealants | caulking gun |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of and ability to apply sealants properly | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 40 Installs self-supporting sloped-glazed and skylite systems into structural openings using the panel system.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 40.01 | Reads blueprints and specifications to determine job requirements. | ability to interpret blueprints<br>knowledge of various fabrication and installation techniques | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 40.02 | Erects scaffolding. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds<br>knowledge of personnel protective devices | scaffolds |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to inspect power lines in order to prevent electrical shocks<br>ability to inspect scaffolds, identify and report problems<br>ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 40.03 | Installs hoisting equipment. | knowledge of safe practices for hoisting<br>knowledge of occupational health and safety regulations governing the use of hoisting equipment<br>ability to select, install and use proper hoisting equipment | hoisting equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 40.04 | Hoists frame in position. | knowledge of safe practices for rigging and hoisting | hoisting equipment, ropes, block and tackle, scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 40.05 | Fastens frame to anchors. | knowledge of fastening devices<br>ability to select proper fastening devices | drill, drill bits, screwdriver, scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 40.06 | Caulks perimetre of frame. | knowledge of the properties and characteristics of various types of sealants<br>ability to select and apply sealants | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 41** **Installs self-supporting sloped-glazed and skylite systems into structural openings using the grid system.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 41.01 | Reads blueprints and specifications to determine job requirements. | ability to interpret blueprints<br>knowledge of various fabrication and installation techniques | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 41.02 | Erects scaffolding. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds | scaffolds |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
|  | knowledge of personnel protective devices<br>ability to inspect power lines in order to prevent electrical shocks<br>ability to inspect scaffolds, identify and report problems<br>ability to work on scaffolds safely |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| 41.03 Installs hoisting equipment. | knowledge of safe practices for hoisting<br>knowledge of occupational health and safety regulations governing the use of hoisting equipment<br>ability to select, install and use proper hoisting equipment |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|
| 41.04 Lays out location of vertical members. | ability to determine the vertical position of members from blueprints<br>ability to lay out accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 41.05 | Secures vertical members to structure. | knowledge of aluminum framing construction<br>ability to secure aluminum extrusion to structure | drill, drill bits, screwgun, screwdriver, scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 41.06 | Secures horizontal members to the verticals. | knowledge of the requirement to apply sealant at each joint<br>ability to secure and adjust horizontal and vertical extrusions together | drill, drill bits, screwgun, screwdriver, scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 41.07 | Caulks perimetre of frame. | knowledge of the properties and characteristics of various types of sealants<br>ability to select and apply sealants | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 42** **Installs skylite and sloped-glazed framing into supported structure.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 42.01 | Reads blueprints and specifications to | ability to interpret blueprints | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | determine job requirements. | knowledge of various fabrication and installation techniques | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 42.02 | Erects scaffolds. | knowledge of occupational health and safety regulations governing the use of scaffolds<br>knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds<br>knowledge of load-bearing capacity of scaffolds<br>knowledge of personnel protective devices<br>ability to inspect power lines in order to prevent electrical shocks<br>ability to inspect scaffolds, identify and report problems<br>ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 42.03 | Installs hoisting equipment. | knowledge of safe practices for hoisting<br>knowledge of occupational health and safety regulations governing the use of hoisting equipment | hoisting equipment |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to select, install and use proper hoisting equipment | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 42.04 | Secures frame. | ability to hoist frame in opening<br>ability to place shim material between aluminum extrusions and steel structural members to avoid corrosion<br>knowledge of chemical reactions between metal substances<br>ability to provide protection against corrosion<br>ability to fasten aluminum extrusions to steel | hammer, drill bits, drill, screwdriver, screw-gun, chalk line, scaffolds, level, plumb bob |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 42.05 | Caulks perimetre of frame. | knowledge of the properties and characteristics of various types of sealants<br>ability to select and apply sealants | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 43 Installs prefabricated skylites into roof openings.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 43.01 | Reads blueprints to determine job requirements. | ability to interpret blueprints<br>knowledge of various prefabrication and installation techniques | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 43.02 | Verifies clearances around openings. | knowledge of basic structural design<br>knowledge of skylite installation procedures | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 43.03 | Prepares work area. | ability to protect roof surface around the skylite opening | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 43.04 | Applies sealants to receive skylite. | knowledge of the properties and characteristics of sealants<br>ability to select and apply sealants | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 43.05 | Secures skylite into position. | ability to centre skylite in curb opening and secures into place | screwdriver, screw-gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 43.06 | Installs flashings. | ability to work with flashings<br>knowledge of flashing techniques | screwdriver, tin snips, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 43.07 | Seals all exposed screws and joints. | ability to select and apply efficient sealants | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 43.08 | Cleans all excess sealants. | knowledge of proper solvents for cleaning sealants<br>knowledge of safety practice when handling solvents |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 43.09 | Cleans debris from roof. | knowledge of good housekeeping procedures | brush |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 44** **Installs residential window systems.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44.01 | Reads blueprints to determine job requirements. | knowledge of and ability to determine job requirements from blueprints and work orders |  | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 44.02 | Verifies the size of frame against rough opening. | ability to measure accurately | measuring tape | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 44.03 | Lays out position of frame in rough opening. | ability to measure and lay out accurately | measuring tape | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 44.04 | Secures frame into structural opening. | knowledge of hardware and other fastening devices | screw-gun, wrenches | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 44.05 | Verifies that all components are level and square in the opening. | ability to inspect framing members for plumb, level and squareness | level, measuring tape, framing square | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK G GLAZING CURTAIN WALLS, STOREFRONTS, ENTRANCEWAYS, SKYLITES, SLOPING WALLS, BARREL VAULTS, SOLARIUMS AND OTHER SUPPORT STRUCTURES

### Task 45 Readies site for work activities.

Trend: More safety concerns due to rising costs of compensation.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 45.01 | Reads blueprints and specifications. | knowledge of and ability to determine jobs requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 45.02 | Inspects work site to determine job requirements. | knowledge of Construction Safety Code<br>ability to assess job requirements<br>ability to assess accessibility and clear path for transporting glass materials | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 45.03 | Determines scaffolding needs. | knowledge of occupational health and safety regulations governing the use of scaffolds | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 45.04 | Makes provision for the storage of materials, tools and equipment. | ability to set up temporary storage facilities for materials and equipment | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 45.05 | Erects barricades. | knowledge of the building code<br>knowledge of public safety<br>knowledge of regulations related to public safety and procedures for obtaining permits for barricades | measuring tape, sledgehammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 46 Assembles, erects and dismantles scaffolds, rigging and hoisting equipment.

Trend: New design in scaffolding has evolved to satisfy current needs, speed and concern for the safety of glaziers. On large projects, scaffolding requirement is contracted out to specialized firms.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.01 | Inspects job site to determine scaffolding requirements. | knowledge of occupational health and safety regulations for construction projects<br>knowledge of safe building practices | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.02 | Selects scaffolds. | knowledge of various types of scaffolds: pre-fabricated, tower, suspended or swinging, tubular and engineered scaffolds<br>knowledge of load-bearing capacity safety factor and maximum permissable span of scaffolds<br>ability to select appropriate scaffolds for specific tasks | scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.03 | Erects scaffolds. | knowledge of and ability to inspect power line on job site to prevent electrical shocks<br>knowledge of regulations governing the use of scaffolds<br>knowledge of safety rules for erecting common and engineered scaffolding<br>knowledge of and ability to select scaffolding frames, braces, sills, planks, safety fittings and various accessories<br>ability to prepare proper footing<br>knowledge of proper spacing of components<br>ability to erect frames, install planking, toe boards, rails and braces | scaffolds |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to erect scaffolds according to manufacturers' instructions and safe practices<br>knowledge of size and height requirements for installing guard rails, middle rails and toe boards<br>ability to fasten ties and brackets properly<br>knowledge of proper angles for ladders<br>ability to secure ladders properly | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.04 | Inspects scaffolds. | knowledge of critical components which requires periodic inspection<br>ability to inspect scaffolds in order to identify problems, loose parts or defects<br>ability to maintain scaffolds<br>ability to complete an inspection checklist and report results | scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.05 | Works on scaffolds safely. | knowledge of safety rules for working at heights and for using scaffolds | scaffolds |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of and ability to use safety harnesses and other safety devices<br>knowledge of load-bearing capacity on scaffolds<br>knowledge of and ability to properly store materials, tools and equipment on scaffolds | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 46.06 | Dismantles scaffolds. | knowledge of safe practices for dismantling different types of scaffolds<br>ability to dismantle scaffolds safely and to store them properly | scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 46.07 | Erects power operated hoists and slings. | knowledge of safe rigging and hoisting practices<br>knowledge of safety codes<br>ability to select appropriate hoisting equipment and accessories<br>ability to assemble and repair hoists and slings systems<br>ability to inspect hoisting and rigging equipment | scaffolds, hoists, slings |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 46.08 | Dismantles hoisting and rigging equipment. | knowledge of correct storage and maintenance for various types of hoisting and rigging equipment<br>knowledge of safety precautions and proper handling of materials | hoisting and rigging equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 47 Secures glass in frames.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.01 | Verifies glass for correct dimensions. | ability to measure accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.02 | Inspects openings. | ability to inspect openings for evenness of rabbet and smoothness of joints<br>ability to align framing members | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.03 | Installs setting blocks. | knowledge of proper spacing of setting blocks | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.04 | Inspects glass. | ability to inspect glass for possible fractures before moving | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.05 | Hoists glass. | knowledge of safe rigging and hoisting practices | hoisting and rigging equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.06 | Installs glass in frame. | ability to use suction cups, slings and webs<br>knowledge of the care and correct usage of glass handling devices<br>knowledge of wet and dry glazing<br>ability to install inside and outside splines<br>knowledge of the amount of shrinkage for various materials<br>knowledge of safety when handling hazardous materials<br>knowledge of safe practices when installing glass plates<br>knowledge of condensation drainage and venting considerations | suction cups, slings, webs, gloves, hand rubbers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.07 | Installs pressure plates and snap covers. | knowledge of correct sealant to apply to pressure plate<br>ability to screw pressure plates on glass with correct amount of pressure | caulking gun, screw-gun, rubber hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 47.08 | Installs aluminum flashings, where required. | ability to install flashings<br>knowledge of flashing design | tin snips, drill, drill bits, measuring tape, screwdriver, pop rivet gun, scaffolds |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 48 Applies caulking and sealants.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 48.01 | Reads job specifications to determine prescribed sealants required. | ability to read and interpret job specifications | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 48.02 | Selects materials. | knowledge of different types of sealants, properties, characteristics and use | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of and ability to select appropriate types of sealants for various applications | |
| | | knowledge of shelf-life of sealants | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 48.03 | Prepares joints. | knowledge of required conditions for sealants to properly adhere to wood, concrete and metal surfaces | paint brush, rags, chisel, putty knife, scraper, wire brush |
| | | ability to clean, dry, prime materials to receive sealants | |
| | | ability to follow manufacturers' specifications | |
| | | knowledge of the effects of temperature on the effective application of sealants | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 48.04 | Determines joint designs. | ability to estimate the amount of movement that will take place between materials to be sealed | |
| | | ability to determine the correct depth and width of the joint to be sealed | |
| | | ability to understand the width and depth ratio of joints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 48.05 | Mixes materials. | ability to follow manufacturers' instructions<br>knowledge of safe practices when handling chemical products<br>knowledge of WHMIS | drill, paddle |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 48.06 | Applies sealants. | knowledge of various techniques for applying sealants<br>ability to apply sealant while ensuring quality of work and appearance<br>ability to control speed and pressure during application<br>ability to give sealant a concave shape<br>ability to fill all voids and ensure the bead is constant<br>ability to centre and secure glass in frame<br>knowledge that glass shifting due to wind load or thermal movement will cause sealant to fail<br>ability to use bond breakers at all ties<br>ability to inspect sealants and determine that a flashing or drip cap is in use | spatula, sandblock, utility knife, caulking tube, bulk caulking gun, manual caulking gun, electrical or air-assisted caulking gun, tooling stick |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to tool the sealant immediately after running the bead<br>knowledge of and ability to apply glazing tape according to manufacturers' instructions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 48.07 | Cleans surrounding area where sealant has been applied. | knowledge of WHMIS<br>knowledge of safe practices when handling chemicals and solvents<br>knowledge of the effects of chemicals on sealants<br>ability to remove excess sealant from frame<br>ability to clean glass | single-edge razor blade |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 48.08 | Takes down scaffolds. | knowledge of safe practices for dismantling scaffolding | wrenches, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 49 Installs glass into a residential aluminum sash.**

Trend: Shifts from sliders to awnings and operators.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 49.01 | Measures window sash before dismantling. | ability to take and record accurate measurements | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 49.02 | Dismantles window sash. | knowledge of the necessity to mark the corners of the sash prior to dismantling<br>knowledge of the various types of manufactured sashes on the market<br>ability to disassemble sashes | screwdriver, hammer, putty knife, awl, pencil |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 49.03 | Removes aluminum channel and vinyl from glass (reglaze). | knowledge of the procedures to remove the aluminum channels and vinyl from the sash | pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 49.04 | Attaches vinyl and aluminum channels to glass edges. | knowledge of the procedure for installing vinyl and aluminum channels to window glass | rubber hammer, wooden block, hammer, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 49.05 | Verifies sash for squareness prior to securing corners. | ability to assemble sash components and verify squareness | screwdriver, awl, hammer, pliers, square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

### Task 50 Installs glass into a residential woodsash.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 50.01 | Removes broken glass. | knowledge of safe practices for handling broken glass<br>ability to select, adjust and wear personal protective equipment | pliers, putty knife, gloves, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.02 | Measures glass. | ability to measure accurately<br>knowledge of clearance required for glass plate | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.03 | Cuts glass to size. | knowledge of safe practices for cutting glass | glass cutter, L-square |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to cut glass to exact size | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.04 | Installs glazing tape on outside of sash. | ability to select glazing tape | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.05 | Installs setting blocks. | knowledge of correct spacing of setting blocks | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.06 | Fits glass in sash. | knowledge of safe practices for lifting and carrying glass | suction cups, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 50.07 | Installs glazing tape on inside stops. | knowledge of the logical procedure for installing glass in sash | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 50.08 | Secures stops in position. | ability to secure stops so as to apply an even pressure on glass | hammer, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 50.09 | Caulks window. | knowledge of proper caulking procedures | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 50.10 | Cleans glass. | ability to remove caulking from glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 50.11 | Cleans work area. | knowledge of good housekeeping procedures<br>knowledge of safe practices for the disposal of broken glass | broom, brush, vacuum |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 51** **Installs glass into a commercial aluminum sash.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 51.01 | Measures frame accurately. | ability to take and record accurate measurements<br>knowledge of tolerance allowances and expansion properties of various architectural metals | measuring tape |
| 51.02 | Removes stops and/or glazing vinyls. | ability to remove stops and glazing vinyls from a variety of architectural metals utilizing proper procedures | screwdriver, glazing bar, putty knife, special deglazing tools, utility knife |
| 51.03 | Removes broken glass remnants. | ability to remove sealants and secure glass remnants in frame<br>knowledge of safety precautions and awareness of inherent danger dealing with broken glass | utility knife, puty knife, glazing bar, suction cups, slings |
| 51.04 | Prepares frame for glass installation. | ability to apply either sealant or vinyl to frame<br>ability to remove old sealant from surface prior to new application | utility knife, putty knife, chisel, side cutters |

| | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 51.01 | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 51.02 | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 51.03 | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 51.04 | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 51.05 | Places glass into frame. | knowledge of the "open glazing" and "blind glazing" process | suction cups, rubber gloves, slings, rubber pads, setting blocks, wooden blocks |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 51.06 | Secures glass in place. | knowledge of the correct sealant to apply<br>ability to install vinyl or metal stops with the correct amount of pressure on glass<br>ability to apply a cap bead | screwdriver, vinyl roller, hammer, wooden blocks, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK H FABRICATING AND INSTALLING SPECIALTY PRODUCTS

### Task 52 Installs glass baffles, smoke baffles and sprinkler baffles.

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 52.01 | Consults drawings and blueprints to determine job requirements. | ability to read and interpret blueprints |  |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to read and interpret job specifications | |
| | | knowledge of safety rules and fire codes | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 52.02 | Erects necessary scaffolds. | knowledge of occupational health and safety regulations governing the use of scaffolds | scaffolds |
| | | knowledge of safe practices regarding the selection, assembly, erection and dismantling of scaffolds | |
| | | knowledge of load-bearing capacity of scaffolds | |
| | | knowledge of personal protective devices | |
| | | ability to inspect scaffolds, identify and report problems | |
| | | ability to work on scaffolds safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 52.03 | Lays out position of baffles. | knowledge of and ability to lay out accurately | measuring tape, square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 52.04 | Installs supporting devices. | knowledge of proper methods to install channels and other retrieving devices<br>ability to use hand tools and power tools | screwdriver, hammer, power screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 52.05 | Cuts and installs glass. | knowledge of safety requirements<br>ability to select and wear proper clothing<br>ability to cut to blueprint requirements<br>ability to clamp and fasten safety glass<br>knowledge of proper methods to install and secure safety glass<br>ability to position glass in a level and plumb manner<br>knowledge of proper clearances<br>ability to install necessary flashings<br>knowledge of proper flashing installation | safety glasses, rubber gloves, wrenches, level, suction cups, screws, drill bits, hacksaw |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 52.06 | Applies appropriate sealants. | knowledge of various sealants/ caulking applications |  |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to ensure installation area is clean and free of any debris<br>ability to apply sealants or caulkings properly with an aesthetic appearance<br>ability to select the most efficient sealant for the task at hand | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 52.07 | Cleans up work area. | ability to perform good housekeeping<br>ability to clean glass and surrounding area | glass cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 53 Installs electronically altered glass.**

Trend: Increased use in high profile applications (government buildings, lawyers' offices, etc.)

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 53.01 | Consults blueprints to determine job requirements. | ability to read and interpret blueprints<br>ability to interpret job specifications | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 53.02 | Lays out glass. | ability to lay out accurately<br>ability to measure accurately | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 53.03 | Orders required glass. | ability to communicate technical information properly<br>knowledge of the purchasing process<br>ability to inspect the condition of the goods received | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 53.04 | Installs electronically altered glass. | knowledge of and ability to install glass according to manufacturers' instructions<br>knowledge of possible jurisdictional trade restrictions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | yes | no | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 53.05 | Cleans up work area. | ability to perform good housekeeping | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | yes | no | yes | yes | yes | NV | NV |

## Task 54 **Installs X-ray glass.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 54.01 | Lays out glass. | ability to lay out patterns accurately<br>ability to measure precisely<br>ability to calculate (imperial/metric) surface area to be glazed | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 54.02 | Cuts X-ray glass. | knowledge of proper safety requirements when cutting X-ray glass<br>ability to estimate materials, hardware and time<br>knowledge of structural support requirements<br>knowledge of the characteristics of X-ray glass | goggles, rubber gloves, cutting tool |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 54.03 | Installs X-ray glass. | ability to use proper lifting techniques<br>ability to position glass in a level and plumb manner | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of proper clearances and tolerances<br>knowledge of manufacturers' installation specifications<br>ability to use proper fastening and clamping devices to secure the glass safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 54.04 | Cleans up work area. | ability to perform good housekeeping<br>ability to clean glass and surrounding area | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 55 Installs heat resistent ceramics. (NOT COMMON CORE)**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 55.01 | Consults job specifications. | ability to interpret job requirements<br>ability to estimate time, needed materials and hardware<br>**(NOT COMMON CORE)** | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 55.02 | Takes proper measurement. | ability to record dimensions accurately<br>knowledge of basic mathematics<br>ability to allow for expansions when recording measurements | measuring tape |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 55.03 | Cuts heat resistant ceramics. | knowledge of proper safety procedures<br>knowledge of ceramic properties<br>ability to cut ceramics safely | goggles, rubber gloves, cutting tool |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 55.04 | Installs heat resistant ceramics. | ability to install the ceramics as per manufacturers' specifications | |

**(NOT COMMON CORE)**

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 55.05 | Cleans up work area. | ability to perform good housekeeping<br>**(NOT COMMON CORE)** | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | no | ND | ND | no | no | yes | yes | yes | NV | NV |

## Task 56 Installs suspended glazing systems.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 56.01 | Consults job specifications. | ability to interpret job requirements<br>ability to estimate time, needed materials and hardware | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 56.02 | Installs top lite of glass. | ability to set first piece of glass level and plumb<br>knowledge of clamping techniques | electric suction cups, scaffolds, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 56.03 | Installs lite of glass directly underneath. | knowledge of and ability to connect glass, patch fittings and carefully maintaining adequate clearances | torque wrenches, electric suction cups, wrenches, scaffolds |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to exert the correct amount of pressure on fittings | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 56.04 | Installs bottom lite of glass. | ability to connect glass carefully<br>ability to maintain adequate clearances<br>knowledge of clamping techniques<br>ability to exert proper amount of pressure on patch fitting<br>knowledge that glass floats in bottom channel (no setting blocks) | torque wrenches, electric suction cups, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 56.05 | Installs glass stabilizers adjacent to main plates. | ability to maintain specified clearances<br>ability to connect to patch fittings or buildings properly | wrenches, suction cups, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 56.06 | Installs remaining glass. | knowledge of typical suspended installations | transit, torque wrenches, electric suction cups, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 56.07 | Levels and plumbs complete wall. | ability to use a builder's level | builder's level |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 56.08 | Caulks all spaces between lites of glass and stabilizers. | ability to apply sealant properly<br>knowledge of aesthetics when using sealants | primer, caulking gun, sealant, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 56.09 | Cleans up work area. | ability to perform good housekeeping |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 57 Installs court glass (racketball, squash).**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.01 | Lays out wall. | ability to lay out accurately<br>ability to measure accurately |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.02 | Installs aluminum framing members around the perimeter of opening. | ability to anchor aluminum members posts<br>ability to cut channel, level and plumb | screws, screwdriver, plugs, drill, level, transit, plumb bob, shims, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.03 | Installs first piece of glass starting at one end of wall. | knowledge of manufacturers' specifications<br>knowledge of and ability to install butt-joint glazing<br>ability to set first piece of glass level on setting blocks<br>ability to install glass sheets sequentially without damaging edges<br>knowledge of clearance between pieces<br>knowledge of and ability to align properly | suction cups, setting blocks, rubber gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.04 | Inserts patch fittings. | ability to install glazing wedge, exerting correct amount of pressure | vinyl roller, side cutters, glazing wedge |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.05 | Installs temporary blocking between lites of glass. | ability to tighten the temporary blocks without breaking the glass<br>ability to keep glass in place | wooden blocks, threaded rod, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.06 | Applies masking tape to exposed edges of glass and cleans edges of glass. | ability to prepare glass for sealant | sealant, caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.07 | Applies clear sealant to spaces between glass. | knowledge of and ability to apply sealant in a professional manner | wrenches, sealant, caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.08 | Removes temporary blocking after sealant has set. | ability to apply sealant in an aesthetic manner | wrenches, sealant, caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 57.09 | Installs hardware. | ability to install required hardware such as hinges and locks for entranceway | wrenches, screwdriver, measuring tape |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of types and characteristics of hardware | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.10 | Installs tempered glass door. | ability to hang door level and plumb in required position | wrenches, screwdriver, level, plumb line |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.11 | Makes final adjustments. | knowledge of proper clearances, tolerances and proper operations<br>ability to adjust and set the operation of doors | screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.12 | Verifies complete wall for stability. | knowledge of the amount of physical abuse taken by the glass wall<br>ability to make proper adjustments and alignments | screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 57.13 | Cleans up work area. | ability to perform good housekeeping | glass cleaner |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to clean glass and surrounding area | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 58 Installs sport boards.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.01 | Reads blueprint and specifications. | knowledge of and ability to interpret blueprints and specifications to determine job requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.02 | Lays out location of glass enclosure. | ability to measure accurately | measuring tape, framing square, level, transit |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.03 | Cuts aluminum framing members to size. | knowledge of safe practices when cutting metals<br>ability to set up and use a cutoff saw | cutoff saw, goggles, gloves |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | ability to select and install proper saw blade |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.04 | Installs aluminum framing members around the perimeter of opening. | ability to anchor aluminum members level and plumb<br>ability to follow manufacturers' instructions | screwdriver, drill, level, transit, plumb bob, shims, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.05 | Installs glass around perimeter. | ability to follow manufacturers' instructions<br>ability to set first piece of glass level, on setting blocks<br>ability to install glass sheets sequentially without damaging edges<br>knowledge of correct amount of clearance to leave between pieces | suction cups, setting blocks, rubber gloves, edge clearance shims |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.06 | Inserts metal face members around perimeter of glass. | ability to install glazing wedge, exerting correct amount of pressure | vinyl roller, side cutters, glazing wedge |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.07 | Installs temporary blocking between lites of glass. | ability to tighten the temporary blocks without breaking glass | wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 58.08 | Applies masking tape to exposed edges of glass and cleans edges of glass. | ability to prepare glass for sealant | sealant, caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 58.09 | Applies clear sealant to spaces between glass. | ability to apply sealant according to manufacturers' instructions<br>ability to remove temporary blocking after sealant has set<br>knowledge of and ability to install butt-joint glazing | wrenches, caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 58.10 | Prepares opening in all-glass front for all-glass tempered door. | ability to install required hardware such as hinges and locks for entranceway | wrenches, screwdriver, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.11 | Installs tempered glass door in all-glass front. | ability to hang door level and plumb in required position | wrenches, screwdriver, level, plumb line |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.12 | Operates door and makes final adjustments. | knowledge of clearances, tolerances and operations | screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 58.13 | Checks complete wall for stability, making proper adjustments. | knowledge of the amount of physical abuse taken by the glass wall | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 59 Installs glass balustrades.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 59.01 | Reads blueprints to determine proper location of lites. | ability to interpret blueprints to determine task requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 59.02 | Lays out string to determine heights. | knowledge of setting-out procedures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 59.03 | Sets lite in recessed bottom channel. | ability to set glass in channel and to temporarily fasten glass<br>knowledge of necessary clearances required between lites | rubber blocks, measuring tape, cedar shingles, suction cups |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 59.04 | Plumbs, levels and squares all lites of glass. | ability to set glass in the required plane | transit, level, setting blocks, suction cups, string line |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 59.05 | Fills bottom channel with proper sealant. | ability to select and apply sealant according to manufacturers' instructions | caulking gun, pail, putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 59.06 | Installs top cap plate, bottom flashing, and any intermediate anchors. | ability to install handrail finishing components | drills, screws, plugs, bits, screwdriver, hacksaw, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 59.07 | Adjusts handrail. | knowledge of and ability to line up handrail | level, string, transit, screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 60** **Fabricates glass showcases.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 60.01 | Reads blueprints to determine task requirements. | ability to read and interpret blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 60.02 | Selects materials. | knowledge of and ability to identify and select materials required to complete task | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 60.03 | Lays out glass. | ability to perform basic setting-out procedures<br>ability to optimize the use of materials | measuring tape, straight-edge |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 60.04 | Cuts glass to size. | knowledge of safe practices for handling and cutting glass<br>ability to cut glass to accurate sizeglass cutter | glass cutter |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 60.05 | Edges glass plates. | knowledge of safe practices for handling cut glass<br>knowledge of and ability to edge glass according to task requirements<br>knowledge of safe practices for using a belt sander<br>ability to select, adjust and wear personal protective equipment | belt sander, rubber apron/gloves/boots, goggles, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 60.06 | Assembles showcase. | knowledge of and ability to determine the logical sequence of operation for the subassemblies and final assembly of all components<br>knowledge of the properties and characteristics of glass adhesives<br>ability to select proper adhesive<br>knowledge of safe practices when handling adhesives<br>ability to select personal protective clothing | measuring tape, clamping devices, square |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of clamping techniques | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 60.07 | Cleans showcase. | knowledge of and ability to select proper cleaning solvents<br>knowledge of safe practices | scraper |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 61 Installs mirrors.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.01 | Consults with owner or superintendent to determine job requirements. | ability to demonstrate good communication and interpersonal skills | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 61.02 | Interprets blueprints. | ability to determine task requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.03 | Determines material requirements. | ability to measure area of wall to be covered and determine number of mirror sheets required<br>knowledge of mathematics<br>ability to select most efficient fasteners for individual applications | measuring tape, electronic calculator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 61.04 | Checks background for plumb and squareness. | knowledge of various techniques for verifying plumb and squareness | spirit level, straight-edge, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 61.05 | Lays out position of mirror. | knowledge of basic setting-out procedures | measuring tape, level, plumb bob |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 61.06 | Cuts mirror to required size and shape. | knowledge of safe practices for handling mirrors<br>knowledge that scratches on silver show through face of mirror<br>ability to ensure a clean work area<br>knowledge of damage caused by setting mirror on hard surfaces<br>knowledge of damaging effect moisture has on silver and mirror backing | paper, cardboard, suction cups, rubber gloves, rubber pads, slings, glass cutter, straight-edge, L-square |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to avoid unnecessary scratching and other abrasive damage to mirror<br>knowledge that reflective side of mirror must not be exposed as image could create a traffic hazard<br>knowledge of safe practices for cutting glass<br>ability to select personal protective equipment<br>ability to lay out accurately<br>ability to perform straight, irregular cuts and notches<br>ability to cut edge of mirror while retaining squareness | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.07 | Drills holes in mirror. | knowledge that mirror will spall considerably more than ordinary glass because of silver coating on back<br>knowledge of special procedures relative to drilling mirrors<br>knowledge of safe practices<br>ability to select and use drill and drill bits safely | drill, drill bits, coolant |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.08 | Performs edge work to mirror. | knowledge of different types of edges<br>ability to take extreme caution when edging surface containing silver, as it flakes easily | belt sander, wet and dry belts, coolant |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.09 | Attaches fastening devices to hold mirror. | ability to fasten correct mirror brackets to wall while retaining allowable tolerances<br>ability to place mounting frame for mirror panels<br>ability to apply protective tape to back edge of top and bottom brackets and place setting blocks on bottom bracket | screwdriver, plugs, screws, brackets, drills |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.10 | Applies mirror mastic to wall surface, if required. | knowledge of correct adhesives to use | putty knife, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.11 | Places mirror in position. | ability to position and adjust mirror for squareness<br>ability to ensure that each panel is installed flush against the other | suction cups, rubber gloves, rubber pads, setting blocks, level |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 61.12 | Cleans mirror wall and surrounding work area. | ability to ensure that work area is cleaned to customer's satisfaction | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 62 Installs shower doors.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.01 | Consults with owner or superintendent to determine task requirements. | ability to demonstrate good communication and interpersonal skills | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.02 | Interprets blueprints. | ability to determine task requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.03 | Verifies that all components are included in package. | knowledge that all pieces required for complete installation are available | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.04 | Marks the hinge side of door location on tile wall. | knowledge that shower door must swing outward<br>ability to measure accurately | level, felt pen, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.05 | Secures hinge side of door to wall. | knowledge of correct fastening methods and fastening devices | screws, plugs, screwdriver, carbide bit, drill |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.06 | Adjusts hinge side of door for correct clearances on locking side. | ability to make necessary adjustments | screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.07 | Secures locking side of door jamb to wall. | knowledge of fastening methods<br>ability to allow proper clearance between door and jamb | screws, screwdriver, carbide bit, drill |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.08 | Checks operation of door, making final adjustments, if necessary. | knowledge of adjustments available | screwdriver, wrenches, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 62.09 | Seals jambs to tiled wall. | ability to apply sealant<br>knowledge of safe practices | sealant, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 63** **Installs tub enclosures.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 63.01 | Consults with owner or superintendent to determine task requirements. | ability to demonstrate good communication and interpersonal skills | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 63.02 | Interprets blueprints. | ability to determine task requirements from blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 63.03 | Cuts bottom track to size. | ability to measure and cut track to size | measuring tape, hacksaw, combination square |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63.04 | Glues base track into location. | knowledge of proper track installation procedures |  | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 63.05 | Secures side jambs into position against tile walls. | ability to plumb side jambs and secure to wall | level, screws, plugs, carbide bit, drill | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 63.06 | Cuts top track to size. | ability to measure and cut track to size | measuring tape, combination square, hacksaw | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 63.07 | Places top track over side jambs. | knowledge that the weight of the doors hold track in position |  | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 63.08 | Lifts doors into position and adjusts for proper fit. | knowledge of roller adjustments | screwdriver, wrenches, pliers | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 63.09 | Caulks side jambs to tiled wall. | knowledge of type of sealant to use and application procedures<br>knowledge of safe practices | sealant, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 63.10 | Cleans glass doors and surrounding work area. | ability to ensure that work area is cleaned to customer's satisfaction | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 64 Fabricates aquariums.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 64.01 | Reads blueprints to determine task requirements. | ability to read and interpret blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 64.02 | Selects materials. | knowledge of and ability to identify and select materials required to complete task<br>knowledge of the construction of framed and all-glass aquariums | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 64.03 | Lays out glass. | ability to perform basic setting-out procedures<br>ability to optimize the use of materials | measuring tape, straight-edge |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 64.04 | Cuts glass to size. | knowledge of safe practices for handling and cutting glass<br>ability to cut glass to accurate size | glass cutter |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 64.05 | Edges glass plates. | knowledge of safe practices for handling cut glass<br>knowledge of and ability to edge glass according to task requirements<br>knowledge of safe practices for using a belt sander<br>ability to select, adjust and wear personal protective equipment | belt sander, rubber apron/gloves/boots, goggles, respirator mask |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 64.06 | Assembles aquarium. | knowledge of and ability to | measuring tape, |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | determine the logical sequence of operation for the subassemblies and final assembly of all components | clamping devices, square |
|  |  | knowledge of the composition properties, function and characteristics of glass sealants |  |
|  |  | ability to select proper non-toxic cements and sealants |  |
|  |  | knowledge of safe practices when handling sealants |  |
|  |  | ability to select personal protective clothing |  |
|  |  | knowledge of mechanical blocking of glass in frames |  |
|  |  | knowledge of water pressure and weight considerations |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 64.07 | Cleans aquarium. | knowledge of and ability to select non-toxic cleaning solvents | scraper |
|  |  | knowledge of safe practices |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

## BLOCK I INSTALLING AND MAINTAINING GLASS DOORS

### Task 65 Maintains automatic doors.

Trend: Increased use of self-contained units and electronic sensors replacing carpet.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.01 | Reads blueprints to determine task requirements. | ability to read and interpret blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.02 | Plans pit type door installations. | knowledge of equipment required<br>ability to ensure all required equipment is available<br>ability to consult with general contractor to determine the provisions for setting the cement case for the hinge and installation of electrical and hydraulic lines<br>knowledge that preliminary layout is critical as the concrete floor will cover equipment<br>ability to consult with general contractor to determine the location and size of underground pit for power unit<br>ability to coordinate installation with general contractor for | |

Sub-tasks | Enabling Objectives | Tools & Equipment

equipment required to be placed before and after concrete is poured

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

65.03 Installs shore box for automatic hinge casing.

knowledge of the proper size and location of shore box

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

65.04 Installs conduit or polyvinyl chloride (PVC) lines from pit area to shore box.

knowledge of the best possible route to lay conduit lines

hacksaw, measuring tape

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

65.05 Checks blueprints and proceeds to secure lines.

knowledge of and ability to set lines in proper location

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

65.06 Consults with contractor to determine that conduit layout will not interfere with other construction.

ability to determine that lines will not interfere with any other job site conditions

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.07 | Installs aluminum door frame in required position. | ability to interpret blueprints<br>knowledge of necessary relationship between door frame and hinge<br>ability to install door frame | level, drill, plugs, screws, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.08 | Removes shore box and installs cement case. | knowledge of the necessary relationship between the surface level of the completed floor and the top of the cement case | hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.09 | Secures automatic hinge in cement case. | ability to locate hinge spindle in proper position<br>ability to make all necessary adjustments<br>ability to ensure that conduits under floor enter cement case prior to grouting case into floor | grout, water, putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.10 | Places power unit into pit. | ability to handle power unit safely | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.11 | Installs hydraulic lines from pit location to hinge. | ability to fish lines through conduit under floor | lines, fish tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 65.12 | Connects hydraulic lines between automatic hinge and manifold on power unit. | ability to wire automatic hinge utilizing industrially approved colour coding principals | flaring tool, wrenches, vise grips |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 65.13 | Connects control wires to the terminal strip on the control box of the power unit. | ability to fish wires through conduit<br>ability to stip wire ends and connect to the proper location on the terminal | fish tape, wire strippers, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 65.14 | Sets carpets (control switch device) into position. | knowledge of and ability to lay out and install electric, pneumatic and hydraulic types controls, carpet, photo-electric, radio wave, pull cord switches and control boxes<br>ability to use test equipment<br>ability to square carpets to door opening | hacksaw, screwdriver |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  | ability to fasten threshold to hinge and case<br>ability to secure threshold in place |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.15 | Fastens carpets to floor by means of mouldings. | ability to secure aluminum mouldings to concrete floor | drill, masonry bit, plugs, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.16 | Connects carpet wires. | knowledge of proper hook-up between carpet wires and control unit | wire strippers, soldering gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.17 | Fills the reservoir on the power unit with hydraulic fluid. | knowledge of required level of hydraulic fluid | screwdriver, hydraulic fluid |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | no | no | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.18 | Plugs control unit into 110 V receptacle. | knowledge of working the air out of the hydraulic system<br>ability to add fluid, if necessary |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.19 | Places the door in opening. | ability to set door in opening<br>knowledge of the proper adjustments to automatic hinge | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 65.20 | Installs finger guard on hinge side of door frame. | ability to drill through the finger guard and fasten in place | drill, drill bits, screwdriver, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | no | yes | yes | NV | NV |

## Task 66 Installs doors with overhead automatic control.

Trend: Increased popularity as a new installation or as a renovation from manual to automatic.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 66.01 | Installs door frame prefabricated header and threshold into opening. | ability to fasten aluminum header to aluminum door jambs<br>knowledge of aluminum door frame installations procedures | drill, drill bits, screwdriver, measuring tape, combination square, anchors, screws |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 66.02 | Installs operator into header. | ability to set operator into header | screws, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 66.03 | Installs electrical control box into header. | ability to set electrical control box into header | screws, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 66.04 | Connects wires between switching device and electrical control box. | ability to wire connections into the electrical control box | pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 66.05 | Installs appropriate switching device. | ability to install and wire prescribed switching device, such as carpets, carpet scan and push plate<br>knowledge of and ability to install photo-electric cells, radio wave controls, pull-cord switches and control box | screwdriver, soldering gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 66.06 | Installs door into opening. | ability to adjust into opening<br>knowledge of top and bottom pivot connections | Allen keys, wrenches, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 66.07 | Tests door operation. | knowledge of proper clearances and speed of automatic door |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 66.08 | Makes final adjustments to operator's speed controls. | ability to locate adjustment screws and set for proper operation | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 67** **Installs offset pivot aluminum doors.**

Trend: No apparent trends indicated.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 67.01 | Makes pivot installation marks on aluminum door frame. | knowledge of critical tolerances<br>ability to measure accurately | measuring tape, combination square, awl |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 67.02 | Cuts out notches. | ability to cut out notch accurately | router |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 67.03 | Drills clearance holes for offset pivots. | ability to drill holes accurately | drill, drill bits, countersink, punch | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 67.04 | Secures pivots into frame. | knowledge of pivot installation procedures | screwdriver | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 67.05 | Sets height of door with adjustments located on bottom pivot. | ability to adjust aluminum offset pivot doors | Allen keys, screwdriver, wrenches | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 67.06 | Sets door for opening edge clearance. | ability to adjust door, allowing it to swing freely | Allen keys, wrenches, screwdriver | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 67.07 | Shims bottom pivot. | knowledge that bottom pivot must rest on solid foundation | metal shim | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## **Task 68** **Installs commercial aluminum butt-hinge doors.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 68.01 | Lays out location of butt hinge on aluminum door jambs. | knowledge of critical tolerances | square, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 68.02 | Cuts out aluminum door jamb providing a seat for butt hinge. | ability to set up jig and use an electric router<br>knowledge of safe practices | router, drill, drill bits, file, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 68.03 | Drills clearance holes for back-up plate in jamb. | ability to drill clearance accurately | hinge, back-up plate, drill, drill bits, countersink, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 68.04 | Secures back-up plate to aluminum jamb. | knowledge of back-up plate installation procedures | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 68.05 | Secures door in position. | knowledge of and ability to hang a butt-hinge door | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 68.06 | Adjusts door for swing clearance. | ability to adjust door for proper swing clearance by shimming back-up plate or hinge | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 69 Installs centre-hung glass and aluminum doors.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 69.01 | Makes installation marks. | ability to mark properly the pivot centre or closer shaft centre of the header<br>ability to make walking beam pivot or concealed overhead closer installation marks on frame header | measuring tape, walking beam pivot, concealed overhead closer, combination square, awl |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 69.02 | Secures concealed overhead closer or | knowledge of centre-hung aluminum door installation procedures | machine screws, screwdriver |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  | walking beam pivot into header of frame. | knowledge of manufacturers' instructions |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 69.03 | Sets bottom pivot on floor. | ability to set floor closer in concrete floor<br>ability to fasten bottom pivot to threshold<br>ability to plumb | plumb bob, measuring tape, screws, drill, drill bits, countersink, screwdriver, grout |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 69.04 | Prepares top pivot. | ability to prepare top pivot for door installation<br>ability to set closer to 90°, hold open position or screw walking beam pivot pin up into the header | crescent wrench, screwdriver, drill bits |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 69.05 | Places door into position. | knowledge that door is placed at right angles to jamb for this operation<br>ability to remove end caps from back edge of door<br>knowledge of installation procedures | screwdriver, Allen keys |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to fasten to concealed overhead closer or walking beam pivot | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 69.06 | Sets the height of the door. | ability to adjust centre-hung door<br>ability to adjust the bottom frame pivot adjustments or shimming the pivot on the door | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 69.07 | Adjusts the swing clearance, using the door pivot adjustments. | ability to adjust centre-hung door | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 70** **Installs all-glass tempered doors.**

Trend: An increase in use of this installation is noted due to safety concerns and aesthetic effect.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 70.01 | Makes installation marks. | ability to mark properly the pivot centre or closer shaft centre of the header | measuring tape, walking beam pivot, concealed overhead |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
|  |  |  | closer, combination square, awl |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 70.02 | Secures pivot into header of frame. | knowledge of and ability to hang an all-glass tempered door<br>knowledge of manufacturers' installation instructions<br>knowledge of various pivots | machine screws, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 70.03 | Sets bottom pivot to floor. | ability to set floor closer to concrete floor<br>ability to plumb | plumb bob, measuring tape, screws, drill, drill bits, countersink, screwdriver, grout |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 70.04 | Lifts door onto bottom pivot. | knowledge that door is placed at right angles to jamb for this operation | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 70.05 | Places door into position. | knowledge of installation procedures | screwdriver, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 70.06 | Adjusts the height of the door. | ability to adjust door | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 70.07 | Selects hardware. | knowledge that all-glass tempered doors require specialized hardware | manufacturers' specifications |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 70.08 | Installs hardware. | knowledge of and ability to install handles and locks to all-glass doors | screwdriver, Allen keys, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 70.09 | Adjusts edge clearance. | knowledge of pivot adjustments<br>ability to adjust top or bottom door pivot | screwdriver, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 70.10 | Makes any final adjustments. | ability to determine the final adjustments required on the overhead concealed closer | screwdriver, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 71** **Installs sliding glass and aluminum doors.**

Trend: An increase in this task is noted due to their popularity in shopping centre installations.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.01 | Reads blueprints to determine job requirements. | ability to read and interpret blueprints | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.02 | Selects materials. | knowledge of and ability to select materials and identify hardware for installing and protecting residential and commercially framed and unframed sliding glass and aluminum doors<br>knowledge of aluminum characteristics<br>ability to request necessary barricades<br>ability to verify work site requirements | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of resources and skills necessary for hanging an all-glass tempered door | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.03 | Installs top track. | ability to measure and install tracks<br>ability to shim tracking to ensure it is level<br>knowledge of installation techniques | drill bits, drill, level, plugs, screwdriver, countersink |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.04 | Installs bottom track. | ability to plumb down from top track to ensure both are parallel<br>knowledge of installation techniques | drill bits, drill, level, plugs, screwdriver, countersink |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.05 | Installs locking jamb and hook catch, if necessary. | knowledge of required hardware (i.e. finger pulls, locks) for sliding door installation<br>ability to read manufacturers' specifications | drill bits, drill, level, plugs, screwdriver, countersink |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.06 | Installs doors. | ability to lift sliding door into proper location<br>ability to insure rollers are centered on guide |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 71.07 | Adjusts bottom rollers. | ability to adjust door components to ensure smooth and proper functioning | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 72** **Installs hardware to commercial glass and aluminum doors.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 72.01 | Reads blueprints to determine job requirements. | ability to read and interpret blueprints<br>ability to determine resources necessary, materials and hardware<br>knowledge of requirements for restrictive work areas (i.e. banks)<br>knowledge of layout and installation techniques of locks and operating (manual) hardware |  |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of automatic hardware (i.e. electric, pneumatic, hydraulic) including control types (carpet, photo-electric, radio wave, pull-cord switches, control boxes)<br>knowledge of fly-screen hardware | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 72.02 | Installs maximum security lock. | ability to use a drill and router to make lock cut-out in door<br>knowledge of manufacturer specifications | router, drill, drill bits, file, jig, centre punch, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 72.03 | Installs flush bolts. | ability to use power equipment to cut out for flush bolts<br>knowledge of various types of hardware | router, drill, drill bits, jig, measuring tape, file |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 72.04 | Installs latch lock. | knowledge of latch lock functions<br>ability to install hardware and ensure proper functioning | router, drill, drill bits, jig, measuring tape, file |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 72.05 | Installs thumb turn cylinders. | knowledge of maximum security lock functions<br>ability to remove key cylinder and replace with thumb turn cylinders | screwdriver, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 72.06 | Installs panic hardware. | knowledge of panic hardware installation procedures<br>ability to adjust for proper closing tension | router, drill, drill bits, jig, measuring tape, file, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 72.07 | Installs handles. | knowledge of various types of handles available (i.e. push, pull) | measuring tape, drill, drill bits, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 72.08 | Installs door sweep. | knowledge of installation procedures | measuring tape, drill, drill bits, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 73 Installs doorlites into commercial aluminum doors.**

Trend: A marked increase in this task is evident due to the popularity of the product in the marketplace.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 73.01 | Removes snap on aluminum stop. | knowledge of aluminum door components and parts | chisel, putty knife | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 73.02 | Installs setting block on the bottom rail. | ability to transfer the weight of the doorlite to the hinge side of door using setting blocks |  | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 73.03 | Sets doorlite into opening. | knowledge of installation techniques<br>ability to handle glass safely | suction cups | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 73.04 | Installs side setting blocks. | ability to transfer the weight of the doorlite using a setting block<br>knowledge of bracing techniques | putty knife, setting blocks | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |
| 73.05 | Tightens the adjustment screw to hold top setting block in place, or to raise door. | ability to adjust and secure door settings | screwdriver | ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 73.06 | Snaps door stops into position. | ability to position door stops | rubber hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK J SERVICING AND MAINTAINING EXISTING FACILITIES

### Task 74 Repairs revolving doors.

Trend: Usually installed by manufacturer.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>knowledge of and ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.02 | Assesses the problem to determine task requirement. | knowledge of specialty products | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 74.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions<br>knowledge of specialty products components<br>ability to estimate time required for task completion | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 74.04 | Orders materials. | ability to write purchase orders and material requisitions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 74.05 | Prepares work area. | ability to protect existing installations during repair and service work<br>ability to determine scaffolding and hoisting requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.06 | Removes door leaf from centre shaft. | knowledge of revolving door components | screwdriver, wrenches, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.07 | Adjusts door for height. | knowledge of proper clearances | screwdriver, wrenches, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.08 | Adjusts door for edge clearance. | knowledge of proper clearances<br>ability to adjust the shaft arms | screwdriver, wrenches, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.09 | Replaces faulty operating mechanisms. | knowledge of revolving door operations<br>ability to remove door and shaft<br>knowledge of various door hardware and operating equipment | manufacturers' manuals, screwdriver, wrenches, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 74.10 | Replaces glass doorlite. | knowledge of door assembly | chisel, screwdriver, wrenches, Allen keys, caulking gun |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | knowledge of proper safety practices when handling glass<br>knowledge of various types of caulking<br>ability to select proper caulking | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 74.11 | Replaces glass in sidelite, when necessary. | knowledge of glass installation techniques in revolving door shell | screwdriver, utility knife, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 74.12 | Cleans work area. | knowledge of good housekeeping procedures<br>ability to clean glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 75 Services commercial aluminum doors.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 75.01 | Consults with client to assess need. | knowledge of good interpersonal skills | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to communicate effectively<br>knowledge of products<br>ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 75.02 | Assesses the problem to determine task requirement. | knowledge of specialty products | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 75.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions<br>knowledge of specialty products components<br>ability to estimate time required for task completion | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 75.04 | Replaces worn or damaged centre-hung pivots. | knowledge of different types of offset pivots<br>ability to replace damaged pivots | screwdriver, Allen keys |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 75.05 | Adjusts door for edge clearance or proper height. | knowledge of allowable tolerances for various installations | metal shims, screwdriver, Allen keys, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 75.06 | Replaces worn or damaged hardware. | ability to work with concealed overhead, exposed and floor type closers<br>knowledge of the various types of hardware<br>ability to follow manufacturers' instructions for replacing different types of hardware | screwdriver, Allen keys, crescent wrench, vise grips, hammer, chisel, wrenches, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 75.07 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 76 Replaces damaged or faulty glass in commercial and residential buildings.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.02 | Assesses the problem to determine task requirement. | knowledge of specialty products | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions<br>knowledge of specialty products components<br>ability to estimate time required for task completion | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.04 | Measures glass accurately. | ability to take accurate measurements | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.05 | Removes faulty or broken window. | knowledge of window construction and assembly | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.06 | Erects appropriate scaffolds, if necessary. | knowledge of scaffolding techniques<br>knowledge of safety requirements and procedures when working on scaffolds | swingstage, ladders, scaffolds and planks |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.07 | Removes sealants. | ability to ensure that frame is free of any debris | utility knife, chisel, putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.08 | Removes stops, clips or mouldings. | knowledge of glazing procedures | glazing bar, chisel, putty knife, hammer, screwdriver, screw-gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.09 | Removes broken glass. | knowledge of safe practices for handling broken glass<br>knowledge of safe practices for the disposal of broken glass | suction cups, rubber gloves, slings, pads |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.10 | Removes any sealants from area where glass was installed. | knowledge that surface area must be clean for new sealant to adhere effectively | putty knife, utility knife, chisel, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.11 | Installs replacement glass into frame. | knowledge of critical clearance tolerances<br>ability to properly install setting blocks | suction cups, rubber gloves, slings, pads, caulking gun, side cutters |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.12 | Applies sealant, as required. | knowledge of and ability to apply sealants | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.13 | Installs glass stops or mouldings. | knowledge of proper glazing procedures | hammer, nails, screwdriver, screws |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 76.14 | Applies sealant to appropriate areas. | knowledge of sealant application and temperature requirements<br>ability to apply sealants effectively | sealant, utility knife, caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.15 | Cleans glass. | ability to remove marks and excess sealant from glass surface | putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 76.16 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 77 Replaces faulty sealant around glass supporting structures.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>knowledge of products | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to advise client on products | |
| | | ability to inform client of future needs | |
| | | knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.02 | Assesses the problem to determine task requirement. | knowledge of sealants | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions | |
| | | knowledge of sealants | |
| | | ability to estimate time required for task completion | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.04 | Orders materials. | ability to write purchase orders and material requisitions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.05 | Prepares work area. | ability to protect existing installations during repair service work<br>ability to determine scaffolding requirements |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 77.06 | Conducts water tests on sealants to identify location of leak. | knowledge of and ability to conduct water tests | water nozzle, hose |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 77.07 | Removes existing sealant and any debris. | ability to clean surfaces in order to allow new sealant to adhere effectively | chisel, utility knife, putty knife, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 77.08 | Resets supporting structure, if necessary. | ability to inspect structure for faulty installation<br>knowledge of a variety of installation techniques | hammer, chisel, suction cups, screwdriver, setting blocks, glazing bar |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 77.09 | Cleans glass and surrounding area. | knowledge of required surface preparation for the application of sealants | solvent, glass cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 77.10 | Chooses proper sealant. | ability to select the sealant for specific task | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 77.11 | Applies sealant. | ability to apply sealants effectively | caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 77.12 | Cleans glass. | ability to remove marks and excess sealant from glass surfaces | putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 77.13 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## Task 78 Repairs glass supporting structures.

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 78.01 | Consults with client to assess need. | knowledge of good interpersonal skills | |
| | | ability to communicate effectively | |
| | | ability to advise client on products | |
| | | ability to inform client of future needs | |
| | | knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 78.02 | Assesses the problem to determine task requirement. | knowledge of glass supporting structures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 78.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions | measuring tape |
| | | knowledge of specialty products components | |
| | | ability to estimate time required for task completion | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to take measurements and prepare a list of all materials to be replaced | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.04 | Orders materials. | ability to write purchase orders and material requisitions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.05 | Prepares work area. | ability to protect existing installations during repair or service work<br>ability to determine scaffolding requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.06 | Constructs temporary boardings. | ability to secure the premises until permanent repairs can be completed | hammer, saw |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.07 | Replaces damaged aluminum extrusions. | knowledge of aluminum extrusion construction | cutoff saw, square, measuring tape, goggles |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to salvage all usable portions of the damaged structure<br>ability to measure, cut and install framing members | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.08 | Installs new glass into repaired storefront. | knowledge of proper glazing techniques<br>ability to install glass according to safe practices | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.09 | Applies sealant. | ability to apply sealants effectively | caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.10 | Cleans supporting structures. | ability to remove protective coating and excess sealant from supporting structure | putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 78.11 | Cleans glass. | ability to remove marks and excess sealant from glass surfaces | putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 78.12 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 79 Repairs worn or damaged hardware.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 79.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>knowledge of hardware<br>ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements of security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 79.02 | Inspects hardware to determine damages. | knowledge of various types of hardware | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 79.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions<br>ability to estimate time required for task completion | electronic calculator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 79.04 | Orders materials. | ability to write purchase orders and material requisitions |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 79.05 | Removes damaged hardware. | knowledge of logical sequence of operation for removing hardware | screwdriver, hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 79.06 | Repairs damaged hardware. | ability to repair damaged hardware<br>ability to determine when hardware components should be repaired or replaced | screwdriver, hammer, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 79.07 | Installs repaired hardware in position. | ability to re-install hardware in the original position | screwdriver, hammer, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 79.08 | Adjusts hardware. | ability to adjust hardware for proper operation | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 79.09 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 80 Performs service work on specialty products, such as mirrors, shower doors, tub enclosures, glass showcases, glass balustrades, table tops, sport boards, court glass, suspended glazing systems, X-ray glass, glass baffles and electronically altered glass.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements for security clearances |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.02 | Assesses the problem to determine task requirement. | knowledge of specialty products | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 80.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematical functions<br>knowledge of specialty products components<br>ability to estimate time required for task completion<br>ability to take measurements and prepare a list of all materials to be replaced | measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 80.04 | Orders materials. | ability to write purchase orders and material requisitions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 80.05 | Prepares work area. | ability to protect existing installations during repair or service work<br>ability to determine scaffolding and hoisting requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.06 | Removes damaged glass. | knowledge of safe practices for handling broken glass<br>ability to select, wear and adjust personal protective equipment<br>knowledge of correct procedures and safe practices for the disposal of broken glass | gloves, goggles, hard hat, toe-cap boots, hammer, suction cups |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 80.07 | Replaces any mouldings, clips or fastening devices. | knowledge of various installation techniques | screwdriver, hammer, putty knife, chisel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 80.08 | Secures glass in place. | knowledge of safe practices for lifting and carrying glass<br>ability to follow manufacturers' instructions for installing specialty products<br>ability to secure glass according to manufacturers' instructions | suction cups, hammer, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 80.09 | Applies caulking and sealant, if required. | knowledge of safe practices | caulking gun |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to apply caulking and sealants to meet different task requirements<br>knowledge of various types of caulking and sealants | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.10 | Replaces worn or damaged hardware. | knowledge of common hardware<br>ability to follow manufacturers' instructions | screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.11 | Cleans glass. | knowledge of various cleaning agents | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 80.12 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

**Task 81 Performs service work on residential windows.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 81.01 | Consults with client to assess need. | knowledge of good interpersonal skills<br>ability to communicate effectively<br>ability to advise client on products<br>ability to inform client of future needs<br>knowledge of requirements for security clearances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.02 | Assesses the problem to determine task requirement. | knowledge of specialty products | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.03 | Estimates materials and labour requirements. | knowledge of and ability to perform basic mathematic functions<br>knowledge of specialty products components<br>ability to estimate time required for task completion | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 81.04 | Orders materials. | ability to write purchase orders and material requisitions | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.05 | Prepares work area. | ability to protect existing installations during repair or service work<br>ability to determine scaffolding and hoisting requirements | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.06 | Replaces broken glass in windows. | knowledge of safe practices for handling broken glass<br>ability to select, wear and adjust protective clothing<br>knowledge of correct procedures and safe practices for the disposal of broken glass<br>knowledge of different types of windows on market<br>ability to reglaze<br>knowledge of safe practices | gloves, goggles, hard hat, toe-cap boots, suction cups, hammer, chisel, putty knife, glazing bar, screwdriver, pliers, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 81.07 | Replaces damaged screens. | ability to replace screens on existing frames | screen roller, razor blade |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.08 | Replaces worn or damaged hardware. | knowledge of different types of windows<br>ability to select and install different types of hardware | hammer, chisel, pliers, screwdriver, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.09 | Repairs worn or damaged hardware. | knowledge of hardware assembly | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.10 | Caulks window. | ability to select and apply caulking | caulking gun, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 81.11 | Cleans glass. | ability to remove marks and excess sealant from glass surfaces | putty knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 81.12 | Cleans work area. | knowledge of good housekeeping procedures | broom, dustpan |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | yes | yes | yes | yes | yes | NV | NV |

## BLOCK K REMOVING AND INSTALLING GLASS ELEMENTS ON AUTOMOTIVE GLASS

### Task 82 Installs vehicle windshields or backlites using gluing techniques.

Trend: Windshield installations periodically change as auto manufacturers alter designs and sealants. In some jurisdictions, this task is performed by specialized glaziers, due to the enforcement of safety regulations.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 82.01 | Inspects vehicle. | knowledge of the necessity to inspect and determine: year, make, model, number of doors, and whether it is a hard top or sedan | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.02 | Determines from customer the shade of glass required. | knowledge of clear or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 82.03 | Orders correct glass material by number. | ability to read and interpret the National Auto Glass Specifications (NAGS) manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.04 | Places protective cover on vehicle before performing work. | knowledge of the costly damage caused by sealant spills and scratches to finish<br>ability to protect the inside and outside of vehicles | tarpaulins, hood cover, fender cover |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.05 | Removes all mouldings and accessories. | ability to remove mouldings without damage<br>knowledge of the necessity to remove windshield wipers | moulding release tool, windshield wiper removal tool, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.06 | Cuts the windshield away from tape or urethane kit. | ability to separate the windshield from the sealant | windshield knife, hot knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 82.07 | Removes any existing sealants from the pinch weld flange. | ability to scrape off any existing sealants<br>ability to clean pinch weld flange to bare metal | windshield chisel, utility knife, chisel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.08 | Applies primer to the pinch weld flange. | knowledge of the purpose of priming<br>ability to avoid damage caused by primer spills on vehicle upholstery | primer brush, primer paint |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.09 | Applies sealant. | ability to select and apply the proper sealant for specific purposes | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.10 | Cleans inside of windshield. | ability to remove all protective coating from windshield | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.11 | Sets windshield into vehicle's moulding. | ability to install setting blocks in correct location | suction cups, setting blocks |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to centre windshield into position while retaining required tolerances | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.12 | Applies sealant to the void between the windshield and frame. | ability to select and apply required sealant correctly | caulking gun |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.13 | Installs mouldings. | ability to detect and replace damaged mouldings and clips<br>ability to install moulding clips | screwdriver, rubber hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 82.14 | Cleans mouldings and exterior of windshield. | ability to clean vehicle work area to customer's satisfaction | vacuum cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 83** **Installs vehicle windshields or backlites using self-locking or lace type rubber techniques.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.01 | Inspects vehicle. | knowledge of the necessity to inspect and determine: year, make, model, number of doors, and whether it is a hard top or sedan | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 83.02 | Determines from customer the shade of glass required. | knowledge of clear or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 83.03 | Orders correct vehicle glass material by number. | ability to read and interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 83.04 | Protects exterior and interior from debris and damage. | knowledge that damage to the paint or upholstery is costly<br>ability to protect the inside and outside of vehicles | hood cover, fender cover, tarpaulins |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 83.05 | Unlocks the self- seal or removes the lace. | ability to unlock the windshield gasket | screwdriver, hook tool |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.06 | Removes any sealant from inside gasket. | ability to separate glass from gasket without damaging gasket | hook tool, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.07 | Removes damaged windshield. | knowledge of correct amount of pressure to exert on windshield without removing gasket from moulding<br>knowledge of safe caulking practices | rubber gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.08 | Cleans inside of new windshield. | ability to remove all protective coating from windshield | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.09 | Sets windshield into gasket. | ability to place windshield into rubber gasket | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.10 | Locks rubber gasket using appropriate tool. | ability to lock rubber gasket around perimeter of windshield | hook tool, lace tool, lock strip tool |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.11 | Applies sealant between windshield and exterior lip of rubber gasket. | ability to apply sealant ensuring there are no leaks | pump applicator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.12 | Cleans exterior of windshield. | ability to remove any excess sealant from windshield | glass cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 83.13 | Cleans work area. | ability to clean work area to customer's satisfaction | vacuum cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 84 Installs vehicle windshields or backlites using one-piece rubber gasket technique.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.01 | Inspects vehicle. | knowledge of the necessity to inspect and determine: year, make, model, number of doors, and whether it is a hard top or sedan |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.02 | Determines from customer the shade of glass required. | knowledge of clear or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 84.03 | Orders correct auto glass material by number. | ability to read and interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 84.04 | Protects vehicle before performing work. | ability to take required precautions against damage to vehicle from sealant spills and tool scratches<br>ability to protect the inside and outside of vehicles | tarpaulins, hood cover, fender cover |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 84.05 | Removes broken windshield. | knowledge of windshield removal techniques involving the one-piece rubber gasket method<br>ability to separate the one-piece gasket from windshield without damaging gasket | hook tool, rubber gloves, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.06 | Cleans inside of windshield. | ability to remove all protective coating from windshields<br>ability to remove decals and grime from replacement windshields without damaging surface | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.07 | Installs windshield into one-piece rubber gasket. | knowledge of installation techniques involved with one-piece rubber gaskets | fibre stick, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.08 | Inserts windshield cord into interior lip of rubber gasket. | knowledge of windshield cord installation procedures around the perimeter of the one-piece rubber gasket | screwdriver, fibre stick, 3/16" diameter windshield cord |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.09 | Places windshield into vehicle moulding. | knowledge of windshield installation procedures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.10 | Secures windshield in position. | ability to apply steady pressure to the exterior of glass while pulling windshield cord | windshield cord, hook tool |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 84.11 | Applies sealant between glass and exterior lip of rubber gasket. | ability to select and apply sealant to avoid any leaks | pump applicator |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 84.12 | Cleans windshield. | ability to clean windshield and work area to customer's satisfaction | vacuum cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 85** **Installs laminated flat safety glass into vehicles.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 85.01 | Inspects vehicle. | knowledge of the necessity to inspect and determine: year, make, model, number of doors, and whether it is a hard top or sedan | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 85.02 | Determines from customer the shade of glass required. | knowledge of clear or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 85.03 | Orders correct glass material by number. | ability to read and interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 85.04 | Cuts laminated glass to pattern specifications. | ability to cut laminated glass, free-hand, to close tolerances<br>knowledge of safe practices | glass cutter, methyl hydrate, glass pliers, razor blade, oil, pattern, goggles, gloves |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 85.05 | Performs edge work on glass. | knowledge of correct type of edge work required for various installations<br>knowledge of safe practices | belt sander, wet and dry sanding belt, rubber gloves, rubber boots, goggles |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 85.06 | Installs flat laminated glass into vehicle. | knowledge of the various types of installation |  |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  |  |  |  |
|---|---|---|---|
| 85.07 | Cleans laminated glass. | ability to clean glass and work area according to customer's satisfaction | glass cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 86 Installs vehicles sidelites.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 86.01 | Inspects vehicle. | knowledge of the necessity to inspect and determine: year, make, model, number of doors, and whether it is a hard top or sedan | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.02 | Determines from customer the shade of glass required. | knowledge of clear or shaded tones of glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.03 | Orders correct glass material by number. | ability to read and interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.04 | Places protective covers. | knowledge of various types of protective covers<br>ability to place protective covers properly | protective covers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 86.05 | Disconnects vehicle battery if door window is power operated. | knowledge of damage caused by short circuit when working inside door panel | wrenches, vise grips, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.06 | Removes door trim panel and watershield. | knowledge of various parts to be removed<br>ability to remove door parts | spring clip tool, screwdriver |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.07 | Vacuums bottom of door panel. | ability to ensure broken glass fragments are removed from door panels to avoid rattles<br>ability to clean all cavities | vacuum cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.08 | Removes guides, brackets, and stops, if necessary. | knowledge of component parts<br>ability to work in a confined area | sockets, nut drivers, wrenches, screwdrivers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 86.09 | Disconnects and removes window channel from regulator. | ability to work in a confined area | sockets, nut drivers, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.10 | Installs new doorlite into channel. | ability to clean tracks<br>knowledge of installation procedures | wrenches, small chisel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.11 | Adjusts doorlite. | ability to lift and level doorlite | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.12 | Installs guides and brackets. | knowledge of the necessity to apply recommended grease to all moving parts | screwdriver, nut drivers, sockets, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 86.13 | Sets stops on top and bottom of door. | knowledge of and ability to adjust sidelite for smooth operation<br>ability to verify for damaged mechanism | screwdriver, nut drivers, sockets, wrenches |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 86.14 | Installs weather shield and door trim panel. | knowledge of proper installation procedures | screwdriver, rubber hammer |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 87 Installs sun-roofs and skylites.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.01 | Inspects vehicle. | knowledge of and ability to inspect and determine: year, make, model, number of doors of vehicle<br>ability to inspect for damage and obtain customer's clearance | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.02 | Determines from customer the shade, style, size, curb of glass required. | knowledge of styles, sizes, curbs<br>knowledge of clear, tint, grade, or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.03 | Orders correct vehicle glass material by number. | ability to interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.04 | Determines desired location of vehicle sun-roof. | ability to locate sun-roof properly | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.05 | Disconnects vehicle battery. | knowledge of automotive electrical wiring<br>ability to locate in vehicle roofing liners | wrenches, vise grips, pliers |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.06 | Applies protective covering to vehicle. | ability to protect vehicle finish from tool scratches and flying debris | tarpaulins, blankets |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.07 | Lays out position of sun-roof. | ability to mark and mask sun-roof pattern on vehicle roof<br>ability to transfer the template dimensions to vehicle properly | template, square, felt pen, measuring tape |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 87.08 | Cuts out the metal portion of roof. | ability to use power tools to remove marked area | nibblers, power shears, drill, sabre saw |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to refer to manufacturer's manual for structural members | |
| | | ability to check dome lights in interior of vehicle for wiring | |
| | | knowledge of safe practices | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.09 | Cuts out headliner of vehicle. | knowledge that this cut must be smaller than the exterior cut-out | razor knife, utility knife |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.10 | Cleans up interior of vehicle. | knowledge of good housekeeping procedures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.11 | Places sun-roof or skylite in opening. | ability to place sun-roof or skylite | screwdriver, vehicle sealant, screws |
| | | knowledge of fitting for clearances | |
| | | ability to apply styrofoam | |
| | | ability to put inner ring | |
| | | ability to refit headliner and tighten all screws | |
| | | ability to check for operation and adjust | |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to secure glass | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.12 | Applies sealants and fastens. | ability to select and apply proper sealants to avoid leaks | vehicle sealant |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.13 | Cleans sun-roof or skylite. | ability to use cleaning agents or solvents<br>ability to restore working area to customer's satisfaction<br>ability to eliminate excessive sealant from working area | glass cleaner, solvent, vacuum cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 87.14 | Cleans up work area. | knowledge of good housekeeping procedures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 88 Installs fixed or operating windows in vehicles.**

Trend: No apparent change.

|  | Sub-tasks | Enabling Objectives | Tools & Equipment | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 88.01 | Inspects vehicle. | knowledge of and ability to inspect and determine: year, make, model, number of doors, and type of vehicle |  | ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |
| 88.02 | Determines from customer the type of glass required. | knowledge of clear, tint, grade or shaded tones of vehicle glass available | manufacturers' glass samples | ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |
| 88.03 | Orders correct glass material by number. | ability to read and interpret the NAGS manual | NAGS manual | ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |
| 88.04 | Determines desired window location from shop superintendent or customer. | knowledge of and ability to locate window properly to avoid additional expense and dissatisfaction from customer |  | ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |
| 88.05 | Marks location of window on vehicle body. | ability to locate and transfer template dimensions to vehicle properly | template, square, felt pen, measuring tape | ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 88.06 | Cuts out the metal portion of the body. | ability to use power tools | nibblers, sabre saw, power shear, drill |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 88.07 | Cuts out the interior finish of vehicle, if necessary. | knowledge that this cut must line up with exterior cut | sabre saw, utility knife, chisel |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 88.08 | Notches back the rib (reinforcing), if necessary. | ability to notch out reinforced area | tin snips |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 88.09 | Sets and secures window in correct location. | ability to select and apply proper sealants<br>ability to secure window with correct amount of pressure | screwdriver, sealant, screws |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 88.10 | Cleans window and removes excess sealant from work area. | ability to use cleaning agents and solvents | vacuum cleaner, glass cleaner, solvents |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| | | ability to restore working area to customer's satisfaction | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 89 Tints glass for vehicles.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.01 | Inspects vehicle. | knowledge of and ability to inspect and determine: year, make, model, number of doors, and type of vehicle | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 89.02 | Determines from customer the type of glass required. | knowledge of tint or shaded tones of vehicle glass available | manufacturers' glass samples |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | | | |
|---|---|---|---|
| 89.03 | Orders correct glass material by number. | ability to read and interpret the NAGS manual | NAGS manual |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.04 | Cleans glass. | knowledge of chemicals for cleaning glass to receive tint<br>ability to clean glass using chemicals | glass solvents |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.05 | Applies spraywater. | ability to spray or apply water to glass receiving tint | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.06 | Applies tinting film. | knowledge of manufacturers' specifications<br>ability to eliminate air bubbles<br>knowledge of application techniques | tinting film |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.07 | Trims edges. | ability to trim edges | exacto knife, scissors |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 89.08 | Cleans up work area. | knowledge of good housekeeping procedures | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

**Task 90** **Repairs windshields.**

Trend: No apparent change.

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 90.01 | Assesses the extent of damage. | knowledge of and ability to examine windshield to determine if it should be repaired or replaced | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 90.02 | Consults with client. | ability to advise client regarding windshield repair or replacement | |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 90.03 | Cleans windshield. | ability to clean windshield and damaged area free from dirt | carbide tool, glass cleaner |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

| | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 90.04 | Injects resin in crack. | knowledge of and ability to select and apply resin<br>knowledge of safe practices<br>ability to determine setting time of resin<br>ability to set up injection equipment | resin injection equipment |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

|  | Sub-tasks | Enabling Objectives | Tools & Equipment |
|---|---|---|---|
| 90.05 | Cleans windshield. | ability to remove resin injection equipment<br>ability to trim and polish excess resin<br>ability to clean work area to customer's satisfaction | glass cleaner, razor blade |

| NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ND | ND | yes | ND | ND | no | yes | yes | yes | yes | NV | NV |

# APPENDICES

APPENDIX "A"

# TOOLS AND EQUIPMENT

## Tools

adhesive pump applicator
Allen keys
C-clamp
caulking gun - 11 oz. size
centre punch
chalk line
channel and vent tool
channel chisel
chisel - cold
chisel - wood 1/2", 1"
construction line
countersinks (#6, #10, #18)
door handle release tool
door panel pry bar
drill - electric
drill bits - high speed steel 1/16" to 1/2"
fibre stick
files - bastard, half moon, round 3/8"
glass cutter
glass pliers
glazing bar
hacksaw frame
hammer - claw
hammer - rubber or plastic
handpads - rubber
hook tool - offset
lace tool
level (24" spirit, 48")
mallet (lead filled)
mallet (rubber)
measuring tape (25' or metric equivalent)
moulding release tool
nail set
nut driver set (imperial and metric)
open end wrenches (imperial and metric)
paint brush - 4"
plate glass lifter
pliers - standard
plumb bob
point driver
power metal shears (nibblers)
putty knife - bent, straight
ratchet set 1/4" to 1" (metric equivalent)
retaining nut removal tool
rivet tool
rubber insert tool
Russell windshield knife (banana knife)
screwdriver - flat (6", 8", 10")
screwdriver - Philips (#1, #2, #3)
screwdriver - Robertson (#0, #1, #2, #3)
scribe
self-locking rubber tool
side cutters
spanner adjustable (6", 10#)
squares - combination, L, sliding T-level
tin snips - regular
tool box - with lock
utility knife
vinyl glazing roller
vise grip - 10"
windshield knives - hot and cold
windshield suction cups
windshield wiper removal tool
wrenches - open end (imperial and metric)

## Machines and Equipment

- argon gas pressured system
- automatic bevelling machine
- automatic cutting table
- automatic diamond wheel edger
- automatic glass washing machine
- automatic vertical edging machine
- bulk sealing applicator
- cranes
- drill press
- finger pull machine
- forklift
- glass cutting table
- glass dollies
- glass racks
- glass rougher
- glass washing machine
- grinders
- hammer drill
- lifting tackles
- milling machine (aluminum)
- nibblers - electric or air
- overhead crane
- overhead glass drilling machine
- portable belt machine
- portable glass notching saw
- portable hand drill - 3/8"
- portable hydraulic case lifter
- polishing machine
- pony clamp - C/W pipe
- powder-actuated tools
- punches
- router - electric or air
- sand blaster
- saw horses
- saws - jig, cutoff, metal cutoff, notching (aluminum), portable mitre (aluminum), radial arm, reciprocating, sabre, table
- scaffolding
- screw-gun
- seal unit press
- shears - metal cutting
- smoothing millspring clamps
- suction cups - powered, standard
- swing stage
- transit water level
- tripod glass drill
- trucks (glass)
- upright belt machine
- vacuum cleaner - shop type

# GLOSSARY

In preparing this analysis, the "what" and "how" have been considered in many instances to shorten the length of the analysis and reduce the number of references to other parts of the analysis. Therefore, when any of the following terms are used, they imply that certain actions are required to be performed by the worker. To clarify the meaning of each term, a definition within the context of the analysis is provided. The reader may assume that encountering these terms in the text indicates performance by the worker.

| | |
|---|---|
| **adhesive** | an epoxy used to glue glass to metal. |
| **anchor** | an aluminum or steel bracket used to fasten aluminum frames at the joining area. |
| **applies** | to put something on (e.g. applying sealant). |
| **architectural metal** | aluminum extrusions designed for commercial application. |
| **arrissed** | a term used to describe a certain type of edge work on glass. To grind the glass back approximately 1/16th of an inch at a 45 degree angle. |
| **awning window** | an operating window which is hinged at the top. |
| **backlite** | the back window of a vehicle. |
| **bevelled** | a term used to describe a certain type of edge work on glass. The edge of the glass is ground back from 1/2 to 1 inch at a 45 degree angle, then polished to a clear finish. |
| **break shape** | thin sheet aluminum which has been formed to a specific shape. |
| **butyl tape** | a preformed glazing tape. |
| **calculate** | to figure out mathematically. |
| **capbead** | a bead of caulking applied from the glass to the stop. |
| **carbide** | very strong steel substance. |
| **carpets** | a switching device for automatic doors. |

| | |
|---|---|
| **casing** | interior or exterior window trim. |
| **caulk** | to apply sealant using a caulking gun. |
| **caulking** | sealant which is supplied in tubes, used to fill all voids and joints concerning glass and aluminum. |
| **clearance** | the distance between two areas. |
| **clip** | a holding or fastening device, usually made of metal. |
| **concealed operator** | a door closer which is hidden inside the aluminum extrusion. |
| **coolant** | a substance used to cool a prescribed area. |
| **curb** | a built-up area on a roof in which a skylite is installed. |
| **curtain wall** | a non load bearing wall constructed of aluminum and glass. |
| **door leaf** | a commercial aluminum door. |
| **doorlite** | the glass which is installed in a door. |
| **drip cap** | a piece of metal at the top of a frame used to deflect water. |
| **edge work** | the process of finishing the cut edge of a glass by sanding or grinding. |
| **electronically altered glass** | specialty glass which can be electronically tinted. |
| **employability skills** | all skills required to seek, obtain and keep a job. |
| **etching** | the process of producing design and patterns on glass surfaces using acids. |
| **extrusion** | an extruding piece of aluminum used for windows or doors. |
| **fabricate** | ability to construct glass support structures using aluminum extrusions. |
| **face** | the outside finish. |
| **flashing** | thin sheet aluminum, formed to a specific shape, generally set underneath an aluminum window. |
| **gasket** | a preformed rubber or vinyl substance used in the glazing industry. |

| | |
|---|---|
| **glaze** | to install glass. |
| **glazing vinyl** | a vinyl (dry sealant) used for glazing purposes. |
| **hang door** | to install a door into a door frame. |
| **head** | the top piece of an aluminum frame. |
| **header** | the top section of the rough opening, in which the aluminum frame fastens into. |
| **jamb** | the side piece of an aluminum door or window frame. |
| **J-mould** | a J-shaped piece of metal used for attaching mirrors. |
| **laminated glass** | glass which has been factory-laminated with polyvinyl butyral in the centre. |
| **lite** | a single piece of glass. |
| **moulding** | a metal trim which covers windshield clips. |
| **mullion** | a vertical or horizontal aluminum cross member of a window frame. Not the top, bottom, or side pieces. |
| **optimization** | the process of laying out materials to cut down waste to a bare minimum. |
| **pinch weld flange** | the metal flange on a vehicle that the windshield rests against. |
| **plumb** | being perfectly straight vertically (noun). To install something perfectly straight (verb). |
| **pocket** | a recess in an aluminum extrusion in which glass is set into. |
| **polished** | a term used for a specific type edge on glass. To grind glass back to its natural state. |
| **prefabbed** | an aluminum frame which has been fabricated. |
| **preglazed** | a window frame that has the glass installed in it before installation of the frame takes place. |
| **pressure plate** | a stop that holds the glass in place in a curtain wall. |
| **putty** | an older form of glazing sealant. |

| | |
|---|---|
| **rail** | top or bottom piece of an aluminum door. |
| **rough opening** | the opening that a window or door frame is installed into (wood, brick, steel). |
| **rubber pads** | pieces of rubber used for carrying glass. |
| **sand-blasting** | the process of carving glass surfaces using sand-blasting equipment. |
| **sash** | residential metal framed window. |
| **scores** | scratches the surface of the glass with a glass cutter. |
| **seamed** | a term used for a certain type of edge work on glass. Arrissed, then smoothed. |
| **setting block** | rubber, lead, or wooden blocks set at the bottom of a piece of glass. |
| **shims** | substance installed between frame and rough opening (wood, nylon, metal). |
| **shop drawing** | the blueprint referring only to your specific trade. |
| **sill** | the bottom piece of a frame. |
| **skylite** | any overhead glazing. |
| **slings** | nylon or leather straps used for carrying glass. |
| **snap cover** | outside finish of a curtain wall frame. |
| **spandrel** | the area between two floors of a building, in front of the floor slabs. |
| **specifications** | written details of job descriptions as well as materials that cannot be put on a blueprint. |
| **spigot** | an aluminum or steel bracket used to fasten frames. |
| **stile** | the side piece of an aluminum door. |
| **stock length** | the standard size length of an aluminum extrusion. |
| **stops** | removable piece of materials that holds glass in place (metal, wood, rubber). |

| | |
|---|---|
| **storefront** | a glass and aluminum enclosure on the main part of a building c/w doors. |
| **suction cups** | glass lifting devices that work with the aid of a vacuum (manual or power assisted). |
| **swiped** | a term used for a certain type of edge on glass (same as arrissed). |
| **tempered** | glass which has been heat-treated in order to strengthen its mechanical properties. |
| **threshold** | the metal piece directly underneath an aluminum door, fastened to the floor. |
| **transom** | a window directly above a door. |
| **weld** | to unite metal components by fusion using gas and/or and electric system. |
| **WHMIS** | Workplace Hazardous Material Information System. |

# PERCENTAGE RATINGS

## BLOCK A PARTICIPATING IN WORKPLACE HEALTH AND SAFETY

Task 1 Demonstrates safety awareness.

Task 2 Maintains a safe workplace environment.

Task 3 Wears personal protective clothing and equipment.

Task 4 Uses common tools, machines and equipment safely.

## BLOCK B PLANNING WORK ACTIVITIES

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 12 | ND | ND | 5 | 5 | 2 | 4 | 3 | NV | NV | 5% |

Task 5 Determines project requirements.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 25 | ND | ND | 25 | 40 | 40 | 60 | 33 | NV | NV | 37% |

Task 6 Determines materials, tools and equipment requirements.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 50 | ND | ND | 50 | 35 | 40 | 30 | 33 | NV | NV | 40% |

Task 7 Determines labour requirements.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 25 | ND | ND | 25 | 25 | 20 | 10 | 34 | NV | NV | 23% |

## BLOCK C HANDLING AND TRANSPORTING GLASS MATERIALS

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 12 | ND | ND | 10 | 5 | 3 | 5 | 4 | NV | NV | 7% |

Task 8 Receives glass materials.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 30 | ND | ND | 45 | 20 | 40 | 30 | 80 | NV | NV | 41% |

Task 9 Transports cases of glass to job site.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 50 | ND | ND | 10 | 30 | 20 | 10 | 5 | NV | NV | 21% |

Task 10 Transports single sheet of glass to job site.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 20 | ND | ND | 45 | 50 | 40 | 60 | 15 | NV | NV | 38% |

## BLOCK D CUTTING AND SHAPING GLASS TO SPECIFICATIONS

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 15 | ND | ND | 5 | 10 | 10 | 5 | 3 | NV | NV | 8% |

Task 11 Performs straight cuts on glass plates manually.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 50 | ND | ND | 55 | 45 | 50 | 50 | 90 | NV | NV | 54% |

Task 12 Performs curved cuts on glass plates free-hand.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 3 | ND | ND | 5 | 10 | 1 | 6 | 2 | NV | NV |

5%

Task 13 Performs circular cuts on glass plates using a circular cutter.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 2 | ND | ND | 5 | 5 | 3 | 6 | 1 | NV | NV |

4%

Task 14 Cuts glass using a computerized cutter.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 0 | ND | ND | 0 | 5 | 2 | 4 | 1 | NV | NV |

2%

Task 15 Performs edge work on glass plates.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 25 | ND | ND | 15 | 10 | 20 | 9 | 1 | NV | NV |

13%

Task 16 Drills holes in glass using carbide and diamond bits.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 5 | 10 | 7 | 6 | 1 | NV | NV |

6%

Task 17 Drills holes in glass using a brass tube bit.

Nat.
Avg.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 5 | 5 | 7 | 6 | 1 | NV | NV |

5%

Task 18 Notches glass plates.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 5 | 5 | 6 | 1 | NV | NV | 5% |

Task 19 Grinds finger pull in glass plate.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 5 | 5 | 6 | 1 | NV | NV | 5% |

Task 20 Bends glass to specifications. **(NOT COMMON CORE)**

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 0 | ND | ND | 0 | 0 | 0 | 1 | 1 | NV | NV | 1% |

## BLOCK E PERFORMING SPECIALIZED TREATMENTS TO GLASS PLATES

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 0 | 5 | 2 | 1 | 1 | NV | NV | 2% |

Task 21 Etches glass using chemicals.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 0 | 35 | 40 | 5 | 15 | NV | NV | 21% |

Task 22 Sand-blasts decal designs on glass.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 80 | ND | ND | 0 | 40 | 60 | 10 | 15 | NV | NV | 41% |

Task 23 Paints on glass to specifications.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 0 | 25 | 0 | 20 | 10 | NV | NV | 13% |

Task 24 Tempers glass to specifications. **(NOT COMMON CORE)**

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 0 | ND | ND | 0 | 0 | 0 | 60 | 30 | NV | NV | 18% |

Task 25 Laminates glass to specifications. **(NOT COMMON CORE)**

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 0 | ND | ND | 0 | 0 | 0 | 5 | 30 | NV | NV | 7% |

## BLOCK F FABRICATING AND INSTALLING SUPPORT STRUCTURES

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 25 | 10 | 25 | 50 | 28 | NV | NV | 24% |

Task 26 Prepares job site.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 2 | ND | ND | 4 | 3 | 1 | 5 | 3 | NV | NV | 3% |

Task 27 Fabricates curtain wall frames from stock length material.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 6 | ND | ND | 4 | 5 | 6 | 4 | 3 | NV | NV | 5% |

Task 28 Fabricates curtain wall frames using prefabricated material.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 6 | ND | ND | 10 | 5 | 8 | 1 | 3 | NV | NV | 6% |

Task 29 Installs spandrel panels into curtain wall frames before attaching unit to structure.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 6 | ND | ND | 4 | 5 | 2 | 2 | 2 | NV | NV | 4% |

Task 30 Installs glass into curtain wall frames before attaching unit to structure.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 6 | ND | ND | 2 | 5 | 3 | 2 | 4 | NV | NV | 4% |

Task 31 Installs aluminum curtain wall framing members to structure using the grid system.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 10 | 5 | 5 | 17 | 6 | NV | NV | 8% |

Task 32 Installs aluminum curtain wall to building structure using the panel system.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 5 | 5 | 5 | 2 | 6 | NV | NV | 5% |

Task 33 Finishes curtain wall after framing members and glass are installed.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 10 | 5 | 10 | 2 | 25 | NV | NV | 9% |

Task 34 Fabricates aluminum storefronts, barrel vaults, solariums and commercial window systems.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 9 | 7 | 6 | 5 | NV | NV | 6% |

Task 35 Installs aluminum storefronts, barrel vaults, solariums and commercial window systems pre-assembled panel.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 10 | 9 | 10 | 8 | 25 | NV | NV | 10% |

Task 36 Installs aluminum storefronts and commercial window systems one piece at a time.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 14 | 1 | 32 | 1 | NV | NV | 9% |

Task 37 Fabricates and installs entranceways.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 6 | ND | ND | 5 | 9 | 10 | 5 | 6 | NV | NV | 7% |

Task 38 Fabricates framing for slope-glazed and skylite installations using stock length material.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 6 | ND | ND | 1 | 3 | 5 | 2 | 2 | NV | NV | 3% |

Task 39 Fabricates framing for slope-glazed and skylite installations using prefabricated frame.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 6 | ND | ND | 4 | 3 | 5 | 3 | 1 | NV | NV | 4% |

Task 40 Installs self-supporting sloped-glazed and skylite systems into structural openings using the panel system.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 6 | ND | ND | 5 | 3 | 2 | 2 | 1 | NV | NV | 3% |

Task 41 Installs self-supporting sloped-glazed and skylite systems into structural openings using the grid system.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 3 | 5 | 3 | 3 | NV | NV | 4% |

Task 42 Installs skylite and sloped-glazed framing into supported structure.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 3 | 5 | 2 | 2 | NV | NV | 4% |

Task 43 Installs prefabricated skylites into roof openings.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 3 | 1 | 1 | 1 | NV | NV | 3% |

Task 44 Installs residential window systems.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 1 | 3 | 9 | 1 | 1 | NV | NV | 3% |

## BLOCK G GLAZING CURTAIN WALLS, STOREFRONTS, ENTRANCEWAYS, SKYLITES, SLOPING WALLS, BARREL VAULTS, SOLARIUMS AND OTHER SUPPORT STRUCTURES

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 40 | 10 | 10 | 20 | 28 | NV | NV | 20% |

Task 45 Readies site for work activities.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 2 | 5 | 5 | 10 | 3 | NV | NV | 5% |

Task 46 Assembles, erects and dismantles scaffolds, rigging and hoisting equipment.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 15 | 5 | 5 | 4 | 2 | NV | NV | 6% |

Task 47 Secures glass in frames.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 20 | ND | ND | 26 | 15 | 35 | 65 | 50 | NV | NV | 35% |

Task 48 Applies caulking and sealants.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 15 | 15 | 10 | 15 | 10 | NV | NV | 13% |

Task 49 Installs glass into a residential aluminum sash.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 20 | ND | ND | 1 | 5 | 15 | 2 | 5 | NV | NV | 8% |

Task 50 Installs glass into a residential woodsash.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 20 | ND | ND | 1 | 5 | 15 | 2 | 5 | NV | NV | 8% |

Task 51 Installs glass into a commercial aluminum sash.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 20 | ND | ND | 40 | 50 | 15 | 2 | 25 | NV | NV | 25% |

## BLOCK H FABRICATING AND INSTALLING SPECIALTY PRODUCTS

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 8 | ND | ND | 5 | 10 | 10 | 1 | 4 | NV | NV | 6% |

Task 52 Installs glass baffles, smoke baffles and sprinkler baffles.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 5 | 5 | 5 | 15 | 25 | NV | NV | 10% |

Task 53 Installs electronically altered glass.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 0 | ND | ND | 16 | 0 | 1 | 1 | 1 | NV | NV | 3% |

Task 54 Installs X-ray glass.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 2 | ND | ND | 1 | 3 | 1 | 1 | 2 | NV | NV | 1% |

Task 55 Installs heat resistent ceramics. **(NOT COMMON CORE)**

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 0 | ND | ND | 0 | 0 | 1 | 1 | 1 | NV | NV | 1% |

Task 56 Installs suspended glazing systems.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 13 | ND | ND | 10 | 3 | 20 | 2 | 5 | NV | NV | 9% |

Task 57 Installs court glass (racketball, squash).

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 5 | 5 | 5 | 1 | 1 | NV | NV | 4% |

Task 58 Installs sport boards.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 2 | 3 | 2 | 1 | 1 | NV | NV | 2% |

Task 59 Installs glass balustrades.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 8 | 5 | 10 | 20 | 35 | NV | NV | 14% |

Task 60 Fabricates glass showcases.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 10 | ND | ND | 1 | 5 | 5 | 4 | 1 | NV | NV | 4% |

Task 61 Installs mirrors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 40 | ND | ND | 50 | 48 | 35 | 50 | 25 | NV | NV | 41% |

Task 62 Installs shower doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 3 | ND | ND | 1 | 5 | 7 | 2 | 1 | NV | NV | 3% |

Task 63 Installs tub enclosures.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 1 | 15 | 5 | 1 | 1 | NV | NV | 5% |

Task 64 Fabricates aquariums.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 7 | ND | ND | 0 | 3 | 3 | 1 | 1 | NV | NV | 3% |

## BLOCK I INSTALLING AND MAINTAINING GLASS DOORS

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 15 | ND | ND | 5 | 25 | 10 | 2 | 18 | NV | NV | 12% |

Task 65 Maintains automatic doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 1 | 3 | 0 | 5 | 2 | NV | NV | 3% |

Task 66 Installs doors with overhead automatic control.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 8 | ND | ND | 1 | 3 | 10 | 5 | 1 | NV | NV | 5% |

Task 67 Installs offset pivot aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 15 | ND | ND | 15 | 20 | 20 | 30 | 20 | NV | NV | 19% |

Task 68 Installs commercial aluminum butt-hinge doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 8 | ND | ND | 15 | 20 | 15 | 20 | 10 | NV | NV | 15% |

Task 69 Installs centre-hung glass and aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 2 | ND | ND | 13 | 5 | 10 | 10 | 22 | NV | NV | 10% |

Task 70 Installs all-glass tempered doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 2 | ND | ND | 15 | 4 | 10 | 10 | 15 | NV | NV | 9% |

Task 71 Installs sliding glass and aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 15 | ND | ND | 15 | 5 | 15 | 5 | 10 | NV | NV | 11% |

Task 72 Installs hardware to commercial glass and aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 15 | ND | ND | 10 | 20 | 10 | 10 | 10 | NV | NV | 13% |

Task 73 Installs doorlites into commercial aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 30 | ND | ND | 15 | 20 | 10 | 5 | 10 | NV | NV | 15% |

## BLOCK J SERVICING AND MAINTAINING EXISTING FACILITIES

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 13 | ND | ND | 5 | 15 | 13 | 2 | 10 | NV | NV | 10% |

Task 74 Repairs revolving doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 2 | ND | ND | 1 | 4 | 1 | 2 | 1 | NV | NV | 2% |

Task 75 Services commercial aluminum doors.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 15 | ND | ND | 15 | 30 | 14 | 13 | 25 | NV | NV | 19% |

Task 76 Replaces damaged or faulty glass in commercial and residential buildings.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 28 | ND | ND | 28 | 10 | 30 | 55 | 2 | NV | NV | 25% |

Task 77 Replaces faulty sealant around glass supporting structures.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 10 | 3 | 10 | 5 | 2 | NV | NV | 6% |

Task 78 Repairs glass supporting structures.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 10 | 3 | 5 | 5 | 1 | NV | NV | 5% |

Task 79 Repairs worn or damaged hardware.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 15 | ND | ND | 10 | 30 | 10 | 10 | 59 | NV | NV | 22% |

Task 80 Performs service work on specialty products, such as mirrors, shower doors, tub enclosures, glass showcases, glass balustrades, table tops, sport boards, court glass, suspended glazing systems, X-ray glass, glass baffles and electronically altered glass.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 15 | ND | ND | 25 | 10 | 10 | 5 | 5 | NV | NV | 12% |

Task 81 Performs service work on residential windows.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 15 | ND | ND | 1 | 10 | 20 | 5 | 5 | NV | NV | 9% |

## BLOCK K REMOVING AND INSTALLING GLASS ELEMENTS ON AUTOMOTIVE GLASS

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 0 | 5 | 15 | 10 | 1 | NV | NV | 6% |

Task 82 Installs vehicle windshields or backlites using gluing techniques.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 40 | ND | ND | 0 | 50 | 50 | 60 | 30 | NV | NV | 46% |

Task 83 Installs vehicle windshields or backlites using self-locking or lace type rubber techniques.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 0 | 5 | 3 | 10 | 10 | NV | NV | 8% |

Task 84 Installs vehicle windshields or backlites using one-piece rubber gasket technique.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 0 | 5 | 3 | 5 | 10 | NV | NV | 7% |

Task 85 Installs laminated flat safety glass into vehicles.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 10 | ND | ND | 0 | 5 | 3 | 5 | 5 | NV | NV | 5% |

Task 86 Installs vehicles sidelites.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 0 | 15 | 2 | 4 | 15 | NV | NV | 8% |

Task 87 Installs sun-roofs and skylites.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 0 | 5 | 3 | 4 | 10 | NV | NV | 5% |

Task 88 Installs fixed or operating windows in vehicles.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ND | ND | 5 | ND | ND | 0 | 5 | 15 | 1 | 5 | NV | NV | 6% |

Task 89 Tints glass for vehicles.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 5 | ND | ND | 0 | 5 | 1 | 1 | 5 | NV | NV | 4% |

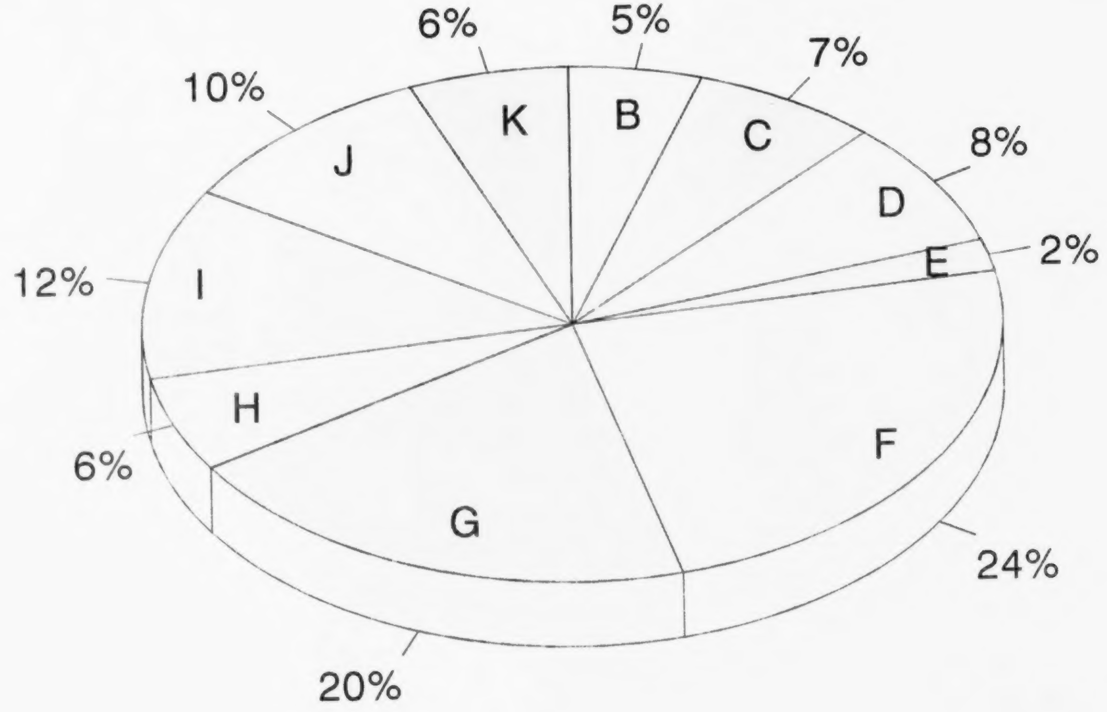
Task 90 Repairs windshields.

| % | NF | NS | PE | NB | PQ | ON | MA | SK | AB | BC | NT | YK | Nat. Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | ND | ND | 10 | ND | ND | 0 | 5 | 20 | 10 | 10 | NV | NV | 11% |

# BLOCK PERCENTAGES

# BLOCK PERCENTAGES*

## Glazier



* The average time a worker spends performing each block in a given year in relation to other blocks of the analysis, taking into consideration the complexity (importance plus difficulty) of the block.

# TITLES OF BLOCKS

| | |
|---|---|
| **A** | **PARTICIPATING IN WORKPLACE HEALTH AND SAFETY**** |
| **B** | **PLANNING WORK ACTIVITIES** |
| **C** | **HANDLING AND TRANSPORTING GLASS MATERIALS** |
| **D** | **CUTTING AND SHAPING GLASS TO SPECIFICATIONS** |
| **E** | **PERFORMING SPECIALIZED TREATMENTS TO GLASS PLATES** |
| **F** | **FABRICATING AND INSTALLING SUPPORT STRUCTURES** |
| **G** | **GLAZING CURTAIN WALLS, STOREFRONTS, ENTRANCEWAYS, SKYLITES, SLOPING WALLS, BARREL VAULTS, SOLARIUMS AND OTHER SUPPORT STRUCTURES** |
| **H** | **FABRICATING AND INSTALLING SPECIALTY PRODUCTS** |
| **I** | **INSTALLING AND MAINTAINING GLASS DOORS** |
| **J** | **SERVICING AND MAINTAINING EXISTING FACILITIES** |
| **K** | **REMOVING AND INSTALLING GLASS ELEMENTS ON AUTOMOTIVE GLASS** |

** Since safety practices are a mandatory feature of all occupations, they are considered common core. Ratings, therefore, are not required for Block A.